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PLANTAE
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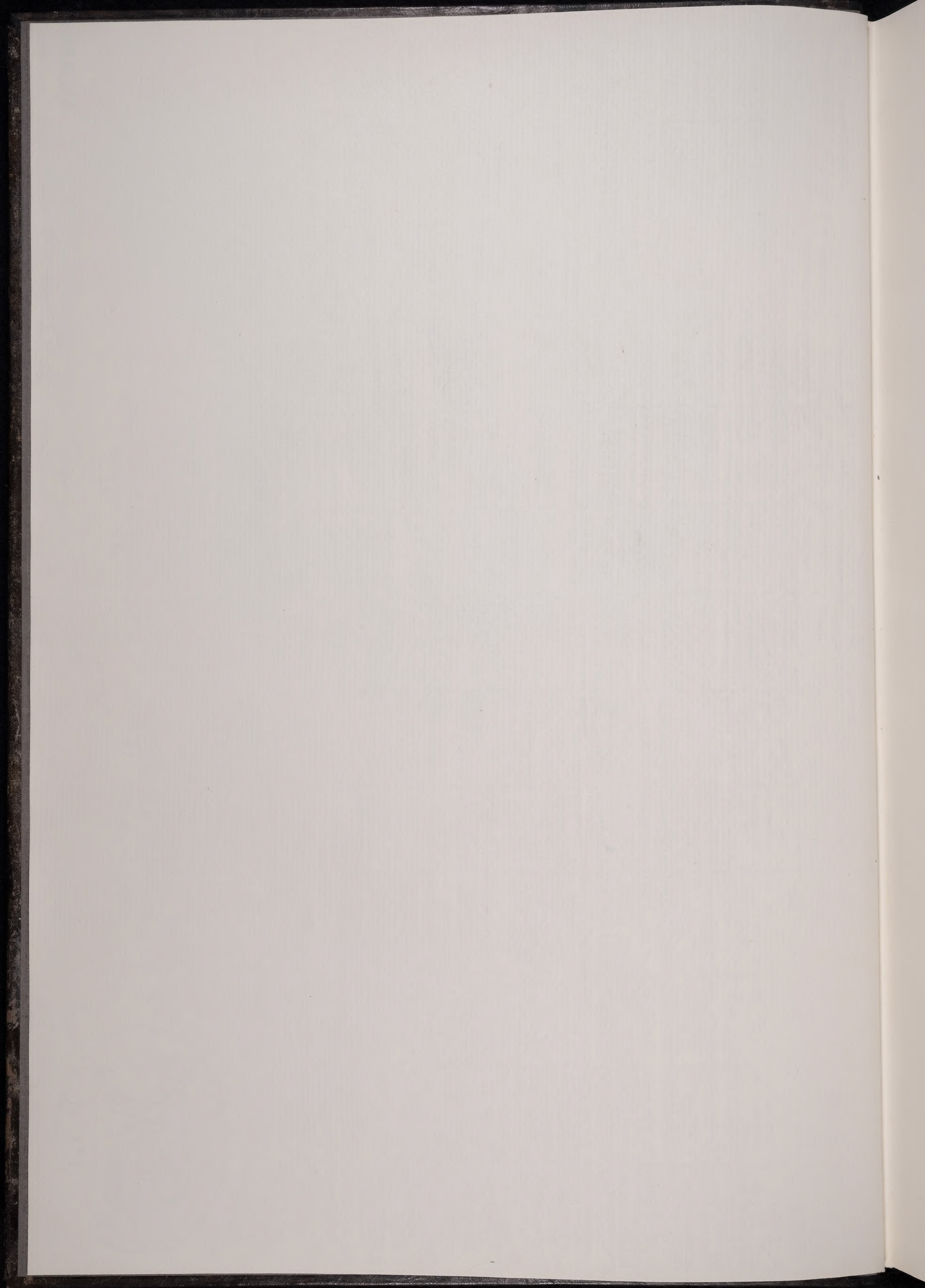
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PLANT

ASIATIC, KAMUJIMA

DESCRIPTION

BY J. H. H. H. H.

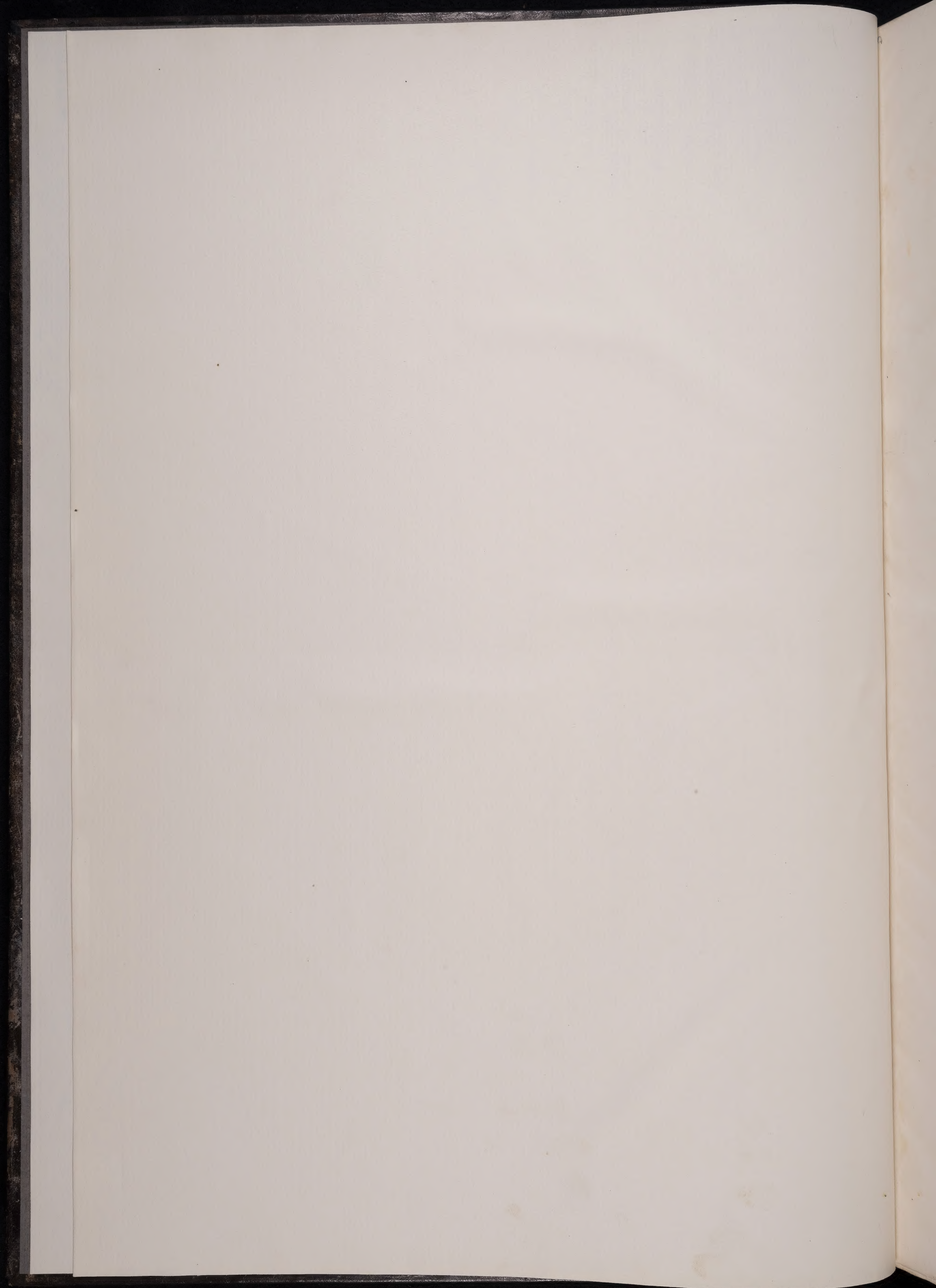
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PLANTÆ
ASIATICÆ RARIORES;

OR,

DESCRIPTIONS AND FIGURES

OF A SELECT NUMBER OF

UNPUBLISHED EAST INDIAN PLANTS,

BY

NATHANIEL WALLICH, M.&PH.D.

KNIGHT OF THE ROYAL DANISH ORDER OF DANNEBROG:

FELLOW OF THE ROYAL SOCIETIES OF LONDON AND EDINBURGH; CORRESPONDING MEMBER OF THE ROYAL INSTITUTE OF FRANCE; FELLOW OF THE LINNEAN AND GEOLOGICAL SOCIETIES OF LONDON; MEMBER OF THE ROYAL SOC. OF SCIENCES, AND THE ROYAL MEDICAL SOC. OF COPENHAGEN, THE ACAD. NAT. CURIOS. OF BONN, THE ASIAT. AGRIC. AND MED. SOCIETIES OF CALCUTTA, THE ROYAL ASIAT. SOC. OF LONDON, THE SOC. NAT. CURIOS. OF MOSCOW; FOREIGN MEMB. OF THE PHYSIOGRAPH. SOC. OF LUND, AND OF THE HORT. SOC. OF LONDON; CORRESPONDING MEMB. OF THE MUS. D'HIST. NAT. OF PARIS, OF THE ACAD. OF NAT. SCIENC. OF PHILAD., THE SOC. OF ARTS AND SCIENCES OF BATAVIA, THE ECON. SOC. OF THE PHILIPPINES; HONORARY MEMB. OF THE HELVETIC SOC. OF NAT. SCIENC., THE ROYAL BOT. SOC. OF RATISBON, THE LIT. SOC. OF MADRAS, THE AGRIC. SOC. OF ST. HELENA, &c. &c.

IN THE BENGAL MEDICAL SERVICE OF THE HONOURABLE EAST INDIA COMPANY, AND SUPERINTENDANT OF THE BOTANIC GARDEN AT CALCUTTA.



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DESCRIPTIONS AND FIGURES

OF A SELECT NUMBER OF

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PRINTER TO THE UNIVERSITY OF LONDON,
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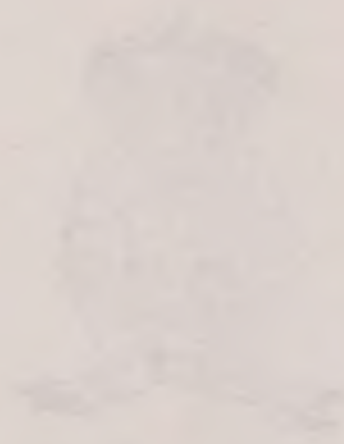


NATHANIEL LEITCH, M.P.R.S.

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1831

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PLANTÆ ASIATICÆ RARIORES.

ASTER BELLIDIODES. Tab. 101.

HERBACEUS, pubescens; caulibus adscendentibus ramisque alternis, simplicibus gracillimis; foliis radicalibus cuneatis, extrorsum acutè serratis, deorsum attenuatis, integerrimis, caulinis linearibus, sessilibus, subintegerrimis; floribus terminalibus, solitariis, subpedunculatis; foliolis involucri linearibus, pubescentibus, acutis; disco luteo, radii corollulis angustissimè linearibus, creberrimis, pallidè violaceis vel albis.

Aster bellidioides, Hamilt. in Don. Prodr. Nepal. 177.

Incolit montes plerosque Napaliæ superiores, florens mensibus Januarii—Martii. Semina matura Aprili.

HERBA adscendens, palmaris, pedalis vel bipedalis, pube brevi conspersa. RADIX constans fibris pluribus, ramulosis. CAULES aliquot debiles, graciles, subadscendentes, levitè sulcati, purpurascens, supernè ramos emittentes alternos, tenerrimos, simplices, teretes. FOLIA radicalia plura, caespitosa, erecto-patula, cuneata, acuta, extrorsum grossiusculè serrata, deorsum integerrima et attenuata, subpetiolata, 2—3-pollicaria, utrinque levitè pubescentia, ciliata, obsoletè 3-nervia, subtus reticulata; ramea sparsa, sessilia, linearia vel lineari-lanceolata, integerrima, inferiora nunc serrulata, summa brevissima, remota. FLORES terminales, solitarii, apicibus caulibus ramorumque gracillimis, subnudis pedunculati, diametrum parum ultra pollicarem emetientes. INVOLUCRUM plano-hemisphaericum, squarrosum; foliola linearia, acuta, pilosula. RECEPTACULUM planum, nudum. DISCUS luteus, convexiusculus, multiflorus. COROLLULÆ hermaphroditæ, tubulosæ, pubescentes, limbo patulo, acutè 5-fido. OVARIA subcylindrica, angulosa, pubescentia, coronata pappo capillaceo, sessili, copioso, sub lente denticulato-sabro, corollâ parum brevior. STIGMA bifidum, supra tubum exsertum, subsessilem antherarum levitè elevatum. RADIUS patentissimus, constans corollulis fœmineis creberrimis, dilutè violaceis, rarè albicantibus, ligulatis, angustissimè linearibus, disco triplò longioribus, obsoletissimè et obtusè 3-denticulatis, basi puberulis pappoque parciore et brevior circumdatis; stylo gracili, stigmatè bilobo. SEMINA parva, oblonga, angulata, pilosula, fusca.

This extremely elegant plant is one of the commonest as well as most ornamental productions on open exposed situations in the mountains which surround the valley of Nipal. It blossoms during the cold part of the year, from the month of January until March. The flowers are of a pale lilac colour, with a yellow disc; the radius changing sometimes into nearly white.

Plate CI. Fig. 1. Corolla of the radius. 2. 3. Corolla of the disc. 4. 5. Ovary and corolla of the latter.

SONERILA ANGUSTIFOLIA. Tab. 102. (figura sinistra.)

FOLIIS ovato-oblongis, acuminatis, subæqualibus, ciliatis, basi acutis, utrinque ramisque simplicibus pilosulis; racemis terminalibus lateralibusque, paucifloris.

Sonerila angustifolia, Roxb. Flor. Ind. 1. p. 182.

Crescit in montibus Bengalæ orientalis, florens tempore anni pluvioso.

HERBA erecta, carnosa, palmaris vel pedalis, pilis brevibus, subulatis, copiosis patentibus, hyalinis conspersa. CAULIS cylindricus, pennam scriptoriam crassus, subpellucidus, simplex, vel ramulos aliquot axillares, oppositos, breves, simplices emittens. FOLIA opposita, subdecussatim patentia, interstitiis dimidiò longiora, ovata, parum oblongata, attenuato-acuminata, vix crenulata, setis brevibus, frequentibus ciliata, basi acutâ parum obliqua, 3—5-pollicaria, utrinque pilosa, suprâ saturatè viridia, subtus purpurea, costâ nervisque alternis prominentibus, subvillosis, venulosa. PETIOLUS pollicaris vel infrâ, levitè sulcatus. PEDUNCULUS terminalis caulibus ramulorumque, nunc lateralis

versus basin caulis, 2-pollicaris, teres, pilosulus, nudus, apice gerens *flores* aliquot rubros, subracemosos, secundos, brevè pedicellatos, suffultos *bracteolis* parvis, lanceolatis, foliaceis. CALYX 3-dentatus; *dentes* parvi, acuti, triangulares. PETALA 3, ovato-lanceolata, ferè unguicularia, acuta, basi parùm contractâ vertici ovarii inter dentes calycinos inserta. FILAMENTA 3, subulata, *antheris* breviora. OVARIUM oblongo-prismaticum, 3-costatum.

Plate CII. (the figure on the left.) Fig. 1. Flower. 2. The same opened.

SONERILA SQUARROSA. Tab. 102. (figura dextra.)

SUFFRUTICOSA, erecta, glabra; caule subsimplici, aculeolis subulatis, mollibus, stipulaceis dense munito; foliis confertis, cuneato-lanceolatis, cuspidato-serratis, lævibus, in petiolum brevissimum attenuatis.

Sonerila squarrosa, Wall. in Roxb. Flor. Ind. 1. p. 182.

Crescit et floret cum priore specie.

I believe I shall not be considered as deviating materially from the original plan of this work, if I occasionally give a plate of a plant which, although published before, has not hitherto been figured. The present and the preceding elegant plants are instances of this description, which will not often occur. I possess eight other species of this curious *Melastomaceous* genus, of which I am happy to announce that Mr. Brown has kindly undertaken to give a synopsis, in a work shortly to be presented by him to the world.

I have nothing to add to the description of *Sonerila squarrosa* which I published in 1820 in Roxburgh's *Flora Indica*.

Plate CII. (the figure on the right.) Fig. 1. Part of the stem, with a leaf attached, enlarged. 2. Flower. 3. Corolla and calyx, opened. 4. Calyx.

ARISTOLOCHIA SACCATA. Tab. 103.

VOLUBILIS; foliis oblongis, vel ovato-oblongis, acuminatis, integris, subtùs ramisque villosis; floribus lateralibus, racemosis, perianthio villoso, inflexo, mediò ventricosò, limbo orbiculato, angustissimo, subrepando, patentissimo, fauce maximâ.

Crescit in montibus altioribus Napaliæ, florens fructificansque mensibus Januarii—Aprilis. In montosis Bengalæ orientalis, *M. R. Smith*. In Kamaon, *R. Blinkworth*.

Nomen Bengalense, *Mattea Chita* (*Plumbago terrestris*).

FRUTEX magnus, latè volubilis, caule digitum et ultrà crasso, ligno levissimo, radiatim celluloso, cortice ferè suberoso, rimoso et anguloso. RAMI longi, graciles, laxi, parùm angulati, tomento molli, ferrugineo, recurvato obsiti, vetustiores glabriores; novelli cum foliis recentibus, aliquandò tota planta densissimè tomentosa. FOLIA alterna, erecto-patentia, subdistantia, oblongo-vel ovato-cordata, attenuato-acuminata, integerrima, sinu basis latiusculo, profundo, lobis rotundatis, suprà glabriuscula, nitidula, subtùs 5-nervia, reticulato-venosa, nervis venisque prominentibus, plùs minùsve villosa, membranacea, 5—10-pollicaria. FLORES atropurpurei, fœtidi, villosi, parallelè venosi, reticulati, intùs flavi, pauci dispositi in racemos breves, subfasciculatos, axillares foliorum delapsorum, ad basin ramorum veterum ipsiusque caulis, nunc ferè solitarii, penduli, mediâ parte rectè adscendentes, 3-pollicares. PEDUNCULUS communis 2-pollicaris, flexuosus, adscendens, ferrugineo-villosus; *partiales* alterni, mediò geniculati, *bracteoides* muniti ovatâ, caducâ, villosâ. PERIANTHII subcarnosi, valdè villosi, dimidia inferior pars descendens, cylindrica, deorsum saccato-ampliata et ventricosa; exterior dimidia pars parallelè adscendens, sensim ampliata in *faucem* magnam, patentissimam, pollicarem, intùs flavam, circumdatam limbo orbiculato, angusto, sinuato, obsoletissimè 3-lobo, patenti, plano vel levitè recurvato. OVARIUM oblongo-cylindricum, subclavatum, unguiculare, obsoletè 6-sulcatum, densè villosum. STYLUS crassus, brevis, triquetrus. STIGMATA 3, carnosa, semilunaria, rorida. ANTHERÆ oblongæ, 2—4 in singulo latere superioris styli partis aggregatæ. CAPSULA ovata, pollicaris vel 2-pollicaris, 6-angulata, angulis valdè prominentibus, subcarinatis, glabriuscula, insidens pedunculo gracili, clavato, ipsam æquantem.

The accompanying plate represents the plant which was introduced in 1815 into the Calcutta Garden from Sillet. That which grows in Nipal differs in some respect, having the leaves broader, of an ovate-cordate form, and in being more villous. But as the flowers are exactly alike, and as the other Indian species vary considerably, I have thought it best not to add to the difficulties of the genus by separating the two shrubs. The flowers are generally produced

in clusters along the woody and naked parts of the stem and branches ; sometimes quite low down towards the ground, whence is derived the otherwise very inappropriate name of *Ground-Plumbago*, which the plant bears in Sillet. They are of a curious form, and not void of elegance, although their smell is extremely offensive.

Besides this plant I am acquainted with the following East Indian species of *Aristolochia*.

A. indica, Linn.

A native of the plains of Hindustan. I have also found it in Pegu about Rangoon. It blossoms and produces fruit during the rainy season.

A. acuminata, Lam.

This very variable plant grows wild in many places of Bengal, such as Sillet, Chittagong, &c. I have found it likewise in the island of Penang, on mountains ; on the banks of the Irawaddi, and of the rivers in Martaban : also at the foot of the mountain called Taong Dong near Ava. It blossoms and ripens its fruit throughout the year.

A. bracteata, Retz.

A native of Coromandel. The late Dr. Hamilton gathered it on the banks of the Jumna, in Upper Hindustan.

Plate CIII. Fig. 1. Lower part of a branch with clusters of flowers. 2. A separate flower. 3. Ovary and column of fructification.

ACER LÆVIGATUM. Tab. 104.

FOLIIS oblongis, acuminatis, serrulatis, nitidis, lævibus ; corymbis terminalibus, subpedunculatis ; petalis cuneatis ; fructûs alis divergentibus, cultriformibus.

Crescit in sylvis montium altiorum Napaliæ ; etiam in albis Sirmorensibus, *Kamrup*. Floret Aprili, fructus maturescunt versus finem pluviarum.

Nomen Newarrense, *Suslendi* ; Parbutteum, *Cherauni*.

ARBOR magna et procera. TRUNCUS 30—40 pedes altus, diametro 3—4-pedali, indutus cortice crassissimo, æquali, glabro, ex cinereo fuscescente. RAMULI teretes, graciles, viminei, nutantes, uti folia læves, nitidique. FOLIA opposita, oblonga, aliquandò subovato-oblonga, attenuato-acuminata, serrulata, dimidiâ inferiore parte nunc integerrima, basi acuta, coriacea, 5-pollicaria, utrinque lucida et reticulato-venulosa, axillis nervorum infra acervulo albo villorum brevium munitis ; juniora acutissimè et grossiusculè serrata, novella cum ramulis rubra. PETIOLI graciles, $\frac{1}{2}$ -pollicares, sulcati, nervique foliorum rufescentes. CORYMBUS terminalis, ovatus, ramosus, elongatione rami parùm pedunculatus, 4-pollicaris, pedunculis subcompressis, alternantibus, rufescentibus. FLORES læves, racemulosi, sæpissimè hermaphroditi, insidentes pedicello clavato, brevi. CALYX coloratus, 5-partitus, laciniis lanceolatis, acutis. PETALA 5, laciniis calycinis alternantia, iisdem vix longiora, cuneata, obtusa, obsolete crenulata, venulosa, alba. STAMINA 10, erecta, intra discum annularem, carnosum, undulatum, lutescentem, convexum inserta ; filamenta breviter, subulata ; antheræ erectæ, oblongæ. OVARIVM ovatum, compressum, villosum, 2-loculare, 4-spermum, ovulis axi adfixis, transversalibus. STYLUS carnosus, cylindricus, glaber, purpurascens, super stamina elevatus. STIGMATA 2, acuta, parallela, demùm subrevoluta. SAMARÆ læves, pollicares, levitè divergentes, loculo basis ovato, reticulatim rugoso, alâ cultriformi, obtusâ, anticè parùm repandâ, basi angustatâ, dorso recto.

This noble forest tree grows to a gigantic size. Its timber is used by the inhabitants of Nipal for rafters, beams, and similar building purposes. It is of comparatively slow growth, the trees in the Botanic Garden at Calcutta, reared from seeds sent down from Nipal by Dr. Hamilton in 1802, being scarcely larger than those of *Acer oblongum*, which were introduced many years afterwards. This last species differs in having perfectly entire, glaucous, and opaque leaves, and by its less gigantic size.

Plate CIV. Fig. 1. Flower. 2. The same dissected. 3. 4. Ovary opened. 5. Cluster of fruit.

ACER STERCULIACEUM. Tab. 105.

FOLIIS cordatis, subtus puberulis, 5-lobis, lobis ovatis, acuminatis, serratis, extimis brevissimis, integerrimis ; racemis lateralibus ; petalis lævibus, samaris . . .

Crescit in monte Sheopore Napaliæ versus apicem ; floret Aprili.

ARBOR magna, umbrosa, trunco diametrum 3-pedalemetiente, cortice sordidè griseo. RAMI alternatim compressi, cinerascetes, callosopunctati, pilis paucis, longis, deciduis muniti ; juniores cum petiolis rufescentes. FOLIA patentia, subrotundo-cordata, palmatim

5-loba, lobis ovatis, acuminatis, grossiusculè serratis, extimis parvis, integerrimis; palmaria ad 10-pollicaria, sinûs basis levis lateribus obtusis, integerrimis; membranacea, nitida, subtus 5-nerviâ, venosa, axillis nervorum villosis; juniora secus vasa villosula, adulta glabra. PETIOLI graciles, teretes, glabri, purpurascens, limbi diametrum ferè æquantes. FLORES masculi albi, villosuli, pedicellati, pauci dispositi in racemulos laterales, raros, laxos, nutantes, 2-pollicares, simplices. PEDUNCULUS basi circumdatus squamis aliquot gemmaceis, villosis; pedicelli suffulti bracteolâ lineari, minutâ. CALYCIS *luciniæ* lanceolatae, obtusæ, cum petalis subæquantibus alternantes. STAMINA 5, 6, vel plura, glabra, inserta disco 5-loba, glabra. PISTILLI rudimentum nullum. FLORES feminei vel hermaphroditi haud visi.

Besides the two species just described, I am acquainted with the following four additional East Indian *Acera*.

A. oblongum, Wall. apud DeCand. in Prodr. Syst. Veg. 1. p. 593.

This Maple grows in the middle range of the mountains which confine the whole extent of Hindustan to the northward. It is common in Nipal; and I have likewise found it on the hills about Deyra Dhoon. In Kamaon, *R. Blinkworth*. In Sirmore, *Kamrup*.

A. caudatum, foliis cordatis, 5-lobis, subtus pubescentibus, ad axillas nervorum venarumque villosis, ætate glabris, lobis ovatis, caudato-acuminatissimis, duplicato-serratis, serraturis cuspidatis; racemis glabris; fructûs alis divergentibus.

A. caudatum et pectinatum, Wall. in Herbario Coetûs Amplissimi Mercatorum Anglicorum Indiæ Orientalis, 1824.

A native of the highest regions of Nipal towards Gossain Than. It has also been found in Sirmore by Dr. Govan: and at Kamaon and Srinaghur by *R. Blinkworth*. It ripens its fruit and begins to blossom in November. The specimens from Kamaon differ somewhat from the others in having less compound serratures, and in the fruit being larger; and this led me, at first, to consider them as two distinct species.

A. cultratum, foliis cordatis, 7-lobis, subtus ad axillas nervorum villosis, cæterum glabris, lobis caudato-acuminatis, integerrimis; corymbis pedunculatis, glabris; floribus subumbellatis, petalis cuneatis, fructûs alis divaricatissimis, semi-lunari-cultriformibus.—*A. cultratum*, Wall. in Herb. citato 1824.

A native of the regions towards the Himalaya, in Kamaon and Srinaghur, *Kamrup* and *Blinkworth*. It is a large tree, and appears to be allied to Thunberg's *A. pictum*.

A. villosum, foliis cordatis, 5-lobis, subtus petiolisque villosis, lobis ovatis, acutis, remotè serratis, lateralibus integerrimis; racemis lateralibus, gemmis foliisque novellis sericeo-villosissimis; petalis apice barbatis, samaris villosulis, alis rectiusculis, cultriformibus, hinc crenulatis.—*A. villosum*, Wall. in Herb. citato 1824.

A native of high Alps, approaching towards those of perpetual snow in Sirmore and Kamaon; *Kamrup* and *Blinkworth*. Mr. Royle found the tree on the Choor mountain.

According to *Blinkworth's* account the tree is very large, and its fruit ripens in November, at which period the very fragrant flowers also begin to appear. *A. sterculiaceum*, described above, approaches very nearly to this species, but differs in being much smoother, which may perhaps be owing to its being found in a much less elevated situation.

Plate CV. Fig. 1. 2. Flower. 3. The same dissected.

CARPINUS VIMINEA. Tab. 106.

FOLIIS ovato-lanceolatis, longè acuminatis, duplicato-serratis, petiolis ramulisque glabris; bracteis fructiferis ovato-oblongis, basi incis, apice subintegris, obtusiusculis.—*Lindl. MSS.*

Nomen Newarrense, *Chukissi*; Parbutteum, *Konikath*.

Crescit in montibus Napaliæ. In Sirmore legit *Dom. Webb*; in Kamaon, *Rob. Blinkworth*. Floret fructusque profert Januario—Aprili.

ARBOR magna, elegans. RAMULI longi, gracillimi et viminei, laxè nutantes, fusi, glabri, callosopunctulati, à morsura insecti cujusdam sæpè verrucosi tuberculis magnis, planis, resinoso-fuscis; *tenelli* villosi. GEMMÆ oblongo-cylindricæ, imbricatæ, squamis oblongis, obtusis, striatis, sericeo-pilosis, ciliatis, unguicularibus. FOLIA bifariè alterna, patentia, approximata, 3—4-pollicaria, lanceolata, duplicatodentata, dentibus latis, cuspidato-acutis, desinentia in acumen longissimum, lineare, serratum, basi obtusa leviterque inæqualia, nunc subretusa, suprâ glabra, rugosula, juxta nervos lineata, subtus costâ gracili nervisque oppositis, obliquis, parallelis, ad axillas villosis, sericeo et adpressè pilosa, ætate ferè glabra; *recentia* suprâ pilosa, subtus villis densis, longis, sericeo-fulentibus, adpressis vestita. PETIOLUS gracilis, semiunguicularis. STIPULÆ nullæ nisi squamæ gemmaceæ duæ, oppositæ, mox deciduæ, ad axillas petiolorum. AMENTA mascula axillaria foliorum præteriti anni delapsorum, solitaria, sessilia, cylindracea, sesquipollicaria, laxa, nutantia, sericeo-pilosula. SQUAMÆ numerosæ, undique patentés, lanceolatæ, acuminatæ, concavæ, aridæ, membranaceæ, flavicantes, striatæ, dorso marginibusque villosæ, lineas 4 longæ; aliquot ad basin amenti subconfertæ, obtusæ, vacuæ. RACHIS filiformis, flexuosa, pilosa. CALYX corollaque nulli. FILAMENTA capillaria, 12—16-fasciculata, glabra, bracteis multò breviora. ANTHERÆ magnæ, ovatæ, obtusæ, lateribus supernè apiceque villis longis, canis barbatae, biloculares; locula distincta, parallela. AMENTA feminea solitaria, terminalia, masculis breviora et graciliora,

subpedunculata, sericeo-villosa. . SQUAMÆ subpatentes, lanceolatae, valdè acuminatae, singulae foventes pistilla duo. OVARIVM minutum, villosum, ovatum, insidens et quasi adnatum *squamulae* lanceolatae, longè barbatae, obsoletè glanduloso-dentatae, eaque multò brevius. STYLI 2, capillacei, puberuli, subparalleli, squamis exterioribus parùm breviores. STIGMATA minuta, acuta, exserta. AMENTUM *fructuum* laxum, 3-pollicare, nutans, suffultum *pedunculo* gracili, subclavato unà cum rachi pilosula. . SQUAMÆ patentiusculae, foliaceae, pallidè virides, nervoso-venosae, glabriusculae, lanceolatae, acutae, concavae, hinc subrectilineae basique 1-dentatae, indè inaequalitè denticulatae, ferè pollicares, geminatae et subsessiles in *pedicello* communi erecto, piloso. NUX solitaria ad basin concavam squamæ, ovata, convexa, costata, fusca, punctis elevatis, subresinosis supernè notata, coronata dentibus calycinis saepissimèque stylis diutius persistentibus, 1-locularis, 2-sperma.

This fine tree is very like the common Alder. Its wood is considered durable, and is used for ordinary building purposes by the natives of Nipal. The slender pendulous branches are frequently attacked by a sort of Coccus, which produce numerous elevated tubercles or warts. The structure of the nut resembles that of *Carpinus Betulus*, as described and figured by the incomparable Gærtner, except in the following respect. The cavity is filled with what appears to me an entire and homogeneous, fleshy, almost colourless substance, exceedingly like a perisperm; in which are suspended, towards the apex of the seed, two minute embryones. It is possible that, notwithstanding the most careful and repeated examination, I may have mistaken the cotyledons of the ripe seed for a perisperm; but I have invariably seen two minute embryones lodged within the upper end of the fleshy substance which fills the nut.

I am indebted to Professor Lindley for the specific character given above, and also for that of the following species, which was sent to me from Gurwal by Kamrup:

Carpinus faginea, foliis ovato-oblongis, acutis, argutè serratis, glabris, petiolis ramulisque pubescentibus; bracteis fructiferis subrhombeis, grossè dentatis, acutis, reticulatis. *C. orientali* accedit; differt foliorum formâ et margine, nec non bracteis diversissimis.—*Lindl. MSS.*

Plate CVI. Fig. 1. 2. 3. Scales with fruit. 4. Detached nut. 5. The same divided horizontally. 6. The same divided longitudinally.

CASTANEA MARTABANICA. Tab. 107.

FOLIIS lanceolato-oblongis, acuminatis, integerrimis, laevissimis, breviusculè petiolatis, basi acutis, subtus argenteis; amentis pubescentibus, densissimè armatis spinis palmato-ramosis, divaricatis.

Crescit ad Amherst in provincia Martabanæ. Fructus maturi Februario.

ARBOR procera, cortice nigricante, rimoso. RAMI cylindrici, calloso-punctulati; ramuli teretes, graciles, fusci, nitidi, uti folia glaberrimi. FOLIA approximata, alterna, patentia, oblongo-lanceolata, acuminata, integerrima, basi acuta, coriacea, 4—5-pollicaria, suprâ saturatè viridia, lucida, subtus subargenteo-pallida, siccitate dilutè ferruginea, costâ gracili, prominente, nervisque obliquis, numerosis. PETIOLI graciles, ½-pollicares, suprâ sulcati. STIPULÆ axillares, oppositæ, lineares, acutæ, erectæ et parallelæ, caducissimæ. INFLORESCENTIA haud visa. FRUCTUS globosi, spinosissimi, magnitudine *Castaneæ vescae*, aliquot parvis, abortivis plerumque intermixti, sessiles, densè congesti in *spicam* cylindricam, simplicem, terminalem ramulorum nudorum, digitum circiter longam. RACHIS cylindrica, demùm cicatricibus crebris, elevatis notata. INVOLUCRUM clausum, fuscum, coriaceum, extus cano-pubescentibus, armatum spinis numerosissimis, magnis, palmato-ramosis, divaricatis, rigidissimis, pubescentibus, subulatis, mucrone fusco acutissimis, intus sericeo-villosum. SEMEN saepissimè unicum, irregularitè globosum, mucronatum, coloris fusci, pilis fulgentibus, sericeis, adpressis.

I have only observed this fine large species of Chestnut in the immediate neighbourhood of Amherst. It was covered with a profusion of fruit in the month of February. The seeds have an astringent taste.

Professor Lindley thinks that there is no difference between *C. argentea* of Dr. Blume's superb *Flora Javæ* and my tree, except that the former is depicted with weak spines, a circumstance no doubt due to the fruit, which was described as having been unripe. I venture to differ in this respect from my highly respected friend. Dr. Blume's tree appears to me to differ in the following points. Its leaves are more acuminate at the apex, and sharper at the base, and their petioles longer; the fruit is smaller, and its spines much shorter and less compound. Besides, the locality seems to indicate a diversity: the Java tree grows on mountains; whereas mine occupies low ground, on the sea-shore of Martaban.

I subjoin a synoptical view of the *Indian Castaneæ*, by Professor Lindley:—

C. indica, foliis oblongis, acutis, simpliciter serratis, subtus tomentosis, reticulatis; spinis fructus subulatis, fasciculatis, intertextis. *C. indica*, Roxb. MSS. Ejusd. Hort. Beng. p. 68.—*Lindl. MSS.*

Montes Napaliæ, 1821. Montes Sillet, *F. De Silva*; Chittagong, *H. Bruce*.

C. sphaerocarpa, foliis ovato-lanceolatis, acuminatis, integerrimis, glabris, spicis masculis brevioribus; spinis fructus
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brevibus, distantibus, palmato-partitis. *Quercus armata*, Roxb. MSS. et Ic. pict. Valdè similis *Q. fenestratæ* Roxb., quæ tamen legitima *Querci* speciès.—*Lindl. MSS.*

Montes Sillet propinqui, *Roxb.*

C. Roxburghii, foliis ovalibus, utrinque acutis, integerrimis, glabris; fructûs sphærici spinis subulatis, fasciculatis intertextis. *Quercus castanicaarpa*, Roxb. MSS. et Ic. pict. Ejusd. Hort. Beng. 68. Spreng. Syst. Veg. 3. p. 856. Folia teste Roxburghio sæpius pedalia, pollices 4 vel 5 lata.—*Lindl. MSS.*

Chittagong, *Roxb.*

C. Tribuloides, foliis ovato-lanceolatis, lanceolatisve, acuminatis, integerrimis, glabris; fructûs ovati spinis multifidis, subulatis, distantibus. *Quercus Tribuloides*, Smith in Cyclop. Reesiana, in loco. *Q. ferox*, Roxb. MSS. et Ic. pict. Ejusd. Hort. Beng. p. 68. Valdè affinis *C. sphaerocarpæ*; differens fructibus minoribus, magis ovatis, spinisque longioribus, plûs quàm in illa intertextis.—*Lindl. MSS.*

Montes Napaliæ, 1821; Sillet, *F. De Silva.*

C. martabanica, suprâ descripta.

C. Tangurut, foliis ovato-oblongis, subtûs, petiolis ramulisque pubescentibus; fructûs sphærici spinis è basi lata subulatis, simplicibus, brevibus, rigidissimis. *C. Tungurut*, Blume Bydr. et Fl. Javan.—*Lindl. MSS.*

Montes Penang, 1822.

C. javanica, Blume in locis citat.

Montes Javæ, ex Blumio.

C. inermis, foliis oblongo-lanceolatis, undulatis, acutis, integerrimis, glabris; fructibus subdidymis, inermibus, fasciatim interruptè tuberculatis.—*Lindl. MSS.*

Habitatio valdè dubia. Singapore 1822?

Plate CVII. Fig. 1. Fruit divided transversely. 2. The same divided longitudinally. 3. A detached spine of the fruit. 4. Nut. 5. The same, with the outer skin partly detached. 6. Umbilical chord, with a suspended abortive ovulum.

EUGENIA FORMOSA. Tab. 108.

FOLIIS elliptico-oblongis, subacuminatis, sessilibus, cordatis, amplexantibus; racemis axillaribus (foliorum delapsorum) sessilibus, brevibus; pedicellis clavatis, elongatis; floribus lævibus, staminibus longissimis; baccis globosis, pendulis.

Crescit ad Moalmyne, et ad bases rupium ripæ Attran in Martabania, flores fructusque proferens mense Martii.

ARBOR valdè procera, latè ramosa. RAMI cortice molli, cinereo induti, à lapsu foliorum cicatricibus magnis notati; ramuli alternatim compressiusculi, nunc triangulares, uti folia floresque glaberrimi. FOLIA opposita, patentissima, ad apicem ramulorum valdè approximata, aliquandò ternata, sessilia, elliptico-oblonga, nunc elongato-oblonga, subacuminata, integerrima, deorsum interdum parùm contracta, basi plûs minùsve obliquè cordatâ amplexantia, lobis rotundatis, brevibus; palmaria ad pedalia, quin sesquipedia, valdè coriacea, suprâ lucida, subtûs opaca et pallida, nervis frequentibus, parallelis, prominentibus, venâ intramarginali, anastomosante magnâ, costâ ad basin valdè crassâ, vix in petiolum perquàm brevem productâ. FLORES magni, dum inaperti purpurei, postea rubicundi, inodori, pauci dispositi in racemos breves, simplices, sessiles, nudos, solitarios, infra folia sublaterales. PEDUNCULI carnosì, læves: communis brevissimus; partiales clavati, pollicares, medio articulati, bracteolisque 2 minutis, lanceolatis, oppositis instructi. CALYCIS lobi patentissimi, orbiculati, subretusi. PETALA 4, orbiculata, unguicularia, lobis calycinis duplò majora. STAMINA perquàm numerosa, undique patentia, longissima; filamenta filiformia, pollicaria, alba; antheræ luteolæ, parvæ. OVARIUM turbinatum; stylus brevis, attenuatus; stigma acutum. BACCA magnitudine juglandis, pendula, globosa, lævis, nitida, calycis lobis, sæpèque stylo persistente coronata, alba, 2-ocularis; caro omninò insipida. SEMINA grandia, rugosa, viridiuscula.

This is by far the largest species of *Eugenia* which I have met with in the Burmese territories. It is a lofty tree, with ample shining coriaceous leaves, and numerous large pink flowers, disposed in lateral, short, and sessile racemes, which are produced from the vestiges of the fallen leaves. The fruit is perfectly insipid.

Plate CVIII. Fig. 1. Ripe berry. 2. The same divided horizontally. 3. A seed.

BETULA ACUMINATA. Tab. 109.

FOLIIS ovato-lanceolatis, subsimpliciter cuspidato-serratis, acuminatis, glabris, subtus punctatis, petiolis ramisque glaberrimis; amentis fructiferis pendulis, longissimis, cylindraceis, aggregatis, rachi bracteisque basi auriculatis pubescentibus.—*Lindl. MSS.*

Nomen Newarrene, *Ootees*.

Crescit in montibus pluribus Nepalæ, et in ipsa convalli magna, secus fluminum ripas. Flores fructusque profert mensibus Decembris—Aprilis. E montibus Sillet confinibus, *H. Bruce*.

ARBOR procera, pulcherrima, valde umbrosa et frondosa, e basi usque ramosa. RAMI cylindrici, fusi, callosopunctati, læves; juniores pubescentes. FOLIA alterna, patentia, ovata, oblongo-ovata, vel lanceolata, inæqualiter et grossiusculè serrata, serraturis latis, incurvis, cuspidatis; attenuato-acuminata, basi subintegerrimâ nunc inæquali rotundata vel acutiuscula, 3—7-pollicaria, suprâ lucida, lævia, lætè viridia, subtus nervoso-venosa, reticulata, asperula propter puncta copiosa, minuta, elevata, resinosa, vix pubescentia; *juniora* rufescentia, utrinque juxta costam nervosque cano-villosa, subtus valde resinosa, dentibus longè et subglanduloso-cuspidatis; vetusta ferè omninò glabra, subcoriacea. PETIOLI pollicares, levitèr sulcati, glanduloso-punctati, minutim paleacei, *juniores* villosi. STIPULÆ gemmaceæ, oppositæ, erectæ, lanceolatæ, acuminatæ, unguiculares, deciduæ, dorso concaviusculæ et pubescentes, marginibus ciliatæ, intus læves. AMENTA gracilia, cylindrica, pendula, rachibus filiformibus, villosis; *mascula* ad apicem ramulorum novellorum fasciculata, sessilia, 5—6-pollicaria, squamis ciliatis, antheris magnis, lævibus; *feminea* masculis breviora gracilioraque, pedunculata, 3—4-subracemosa, albicantia, villosula. SQUAMÆ parvæ, crassiusculæ, trifloræ, pubescentes, ciliatæ, patentès, hastato-trilobæ; *lobus intermedius* lanceolatus, acutus, *laterales* breves, ovati, obtusi. OVARIIUM lentiforme, pubescens, cinctum membranâ reniformi, retusâ, crenatâ, ciliatâ. STYLII duo, villosuli, divergentes. FRUCTUS lævis, cinctus alâ reniformi, retusâ.

This fine tree grows in many places of Nipal, both in the great valley and on the surrounding mountains. It attains from fifty to sixty feet in height, and is of an oval shape, being branchy from the very base. The wood is greatly esteemed by the inhabitants, and is employed for all sorts of purposes where strength and durability are required. Prof. Lindley is of opinion that the specimens from the mountains bordering on Sillet differ in no respect from the others, except in the leaves being somewhat tougher or harder, and he thinks that *B. alnoides*, (Don Prodr. Nepal. p. 58,) refers to this variety. I am indebted to that esteemed friend for the essential characters of the three following species of *Betula*.

B. cylindrostachya, foliis oblongis, acuminatis, cordatis, argutè duplicato-serratis, ramulis petiolis venisque subtus tomentosis; amentis fructiferis pendulis, longissimis, cylindraceis; fructibus altè bilobis, bracteis lineari-lanceolatis, obtusis, membranaceis, basi bidentatis, ciliatis majoribus. *B. cylindrostachya*, Wall. in Herb. Coet. Ampl. Merc. Angl. Ind. Or. 1824. *B. acuminatæ* Wall. affinis sed distinctissima.—*Lindl. MSS.*

Kamaon, *R. Colquhoun*, Baronetus; *R. Blinkworth*.

B. nitida, foliis oblongis, acuminatis, argutè duplicato-serratis, ramulis petiolisque pilosis; amentis fructiferis pendulis, cylindraceis, aggregatis, bracteis trilobis, pilosis: lobo medio producto, fructibus longiore. *B. nitida*, Don Prodr. Nepal. 58. *B. cylindrostachya*, Wall. in Herb. cit. Omninò inter *B. acuminatam* et *B. cylindrostachyam* media, huic foliis, illi fructu accedens, ab utraque characteribus datis distinguenda.—*Lindl. MSS.*

Kamaon, *Blinkworth*.

B. Bhojpattra, foliis oblongis, acutis, subsimpliciter serratis, basi subcordatis, petiolis ramulis venisque subtus pilosis; amentis fructiferis erectis, cylindraceis, oblongis; bracteis glabris, lignosis, bipartitis, obtusis, fructibus angustè alatis multò longioribus. *B. Bhojpattra*, Wall. in Herb. cit. *B. utilis*, Don. loc. cit. Folia nunc simpliciter nunc duplicatò serrata in eodem ramo; amenta fructifera aliquandò parùm elongata.—*Lindl. MSS.*

Alpes Gurwal et Kamaon, *Dominus Webb*, *Kamrup* et *Blinkworth*.

The epidermis of this species of Birch is used by the mountaineers instead of paper for writing upon. It is of a very delicate texture, and peels off in large masses, of which great quantities are brought down into the plains of Hindustan, where it is employed for covering the inside of the long flexible tubes of the apparatus used for smoking tobacco, commonly called Hooka. The Sanscrita name of the substance is *Bhoorja*; in the Bengali language, *Bhoorjapattra*; and in the Hindustani, *Bhojpattra*. My worthy friend Mr. Graves Haughton, Oriental Examiner to the Honourable East India Company, to whom I am indebted for the above synonyms, is of opinion that the word *Bhoorja* is the etymon of Birch, and that it is one of the many proofs of the descent of the Saxon part of the English language from the Sanscrita.

Plate CIX. Fig. 1. Female floret. 2. Scale detached. 3. Fruit.

URARIA CRINITA, var. MACROSTACHYA. Tab. 110.

RACEMIS maximis, folio duplò longioribus; pinnis 3—4-jugis, concoloribus.
Habitat in China, *Dom. Reeves*; prope Sillet in Bengalia, *F. De Silva*. Ipse observavi ad Amherst in Martabaniam.
Ad Tavoy, *Gomes*. In Horto Botanico Calcuttæ floret et fructus profert mensibus Octobris et Novembris.

FRUTEX 2-pedalis, parcè ramosus; spicifer 4-pedalis. RAMI crassi, cylindrici, ferè simplices, subflexuosi, petiolique obsiti pube molli, canescente, patente, hamulosâ. FOLIA patentia, alterna, pedalia vel longiora, pinnata, 3—4-juga. PINNÆ exactè oppositæ, oblongæ, acutæ, basi hinc rotundiore obtusæ, subsessiles, 5-pollicares, coriaceæ, suprâ uniformitè saturatè virides, secùs vasorum tractus levitèr puberulæ, cæterùm glabræ, nitidæ, subtùs copiosè pubescentes, incanæ, costâ nervisque obliquis gracillimis, venis transversè reticulatis, prominentibus; exteriores parùm minores, terminalis proximis major. PETIOLUS communis 4—6-pollicaris, cylindricus, suprâ planiusculus, basi intumescens, desinens in rachin rectam, pubescentem, noduloso-articulatam; *partiales* brevissimi, cylindrici, crassiusculi. STIPULÆ magnæ, ferè pollicares, triangulari-lanceolatæ, erectæ, aridæ, striato-nervosæ, pilosæ et ciliatæ, deciduæ, e basi lata et obliqua attenuatæ in acumen longissimum, setaceum; *stipellæ* majusculæ, lineari-lanceolatæ, persistentes, acuminatæ. RACEMUS maximus, terminalis, sessilis, cylindraceo-subclavatus, obtusus, densiflorus, pedalis, 2-pedalis, quin longior, pollicem et dimidium ad duos crassus; fructifer gracilior; pilis longis, mollissimis abundè barbatus, solitarius, vel uno duobusve brevioribus lateralitèr stipatus; ante florum expansionem densissimè et adpressè bracteatus, strobiliformis. FLORES magni, purpurei, densissimi, geminati, patentes. BRACTEÆ magnæ, lanceolatæ, membranaceæ, caudato-acuminatæ, pilis longis ciliatæ, dilutè roseæ, caduæ; ad apicem racemi seriùs deciduæ, sæpè floribus vacuæ. RACHIS cylindrica, subcarnosa. PEDICELLI filiformes, barbati, patentissimi, apice articulatâ incurvi. CALYX urceolatus, bilabiatus, profundè divisus in *lacinias* 5, setaceo-acuminatissimas, barbatus. COROLLÆ *vexillum* rectè adscendens, ovatum, acutum, planum, atropurpureum, basi notatum maculis binis, oblongis, parallelis, e viridi flavis; *carina* alæque pallidæ, obtusæ, longitudine subæquales. STAMINA 10, diadelphe; apices filamentorum alternatim paullò crassiores et breviores. LEGUMEN spiralitèr contortum, atrum, calyce parùm longius, pedicello valdè incurvo suffultum; articuli lenticulares, 5 vel 6, puberuli.

When I first received this stately plant from China, whence it was introduced into the Botanic Garden at Calcutta by Mr. John Reeves, I thought it was specifically distinct from *Uria crinita* of Desvau. On comparing it, however, with the plants brought from other parts of India, I have come to the conclusion that it is only a variety of that species. In general stature it is a shorter plant; but the leaves are much larger, and the spike far longer and thicker. The leaflets are generally clouded in the centre in *U. crinita*, in our plant they are uniformly green. The variety grows also at Sillet, and I have found it at Amherst in Martaban. W. Gomez brought me specimens from Tavoy.

It is requested that the name on the plate may be altered to *U. crinita*, var. *macrostachya*.

Plate CX. Fig. 1 & 2. Flower. 3. The same dissected. 4. Part of a fruit-bearing raceme. 5. A ripe pod.

LEUCOMERIS SPECTABILIS. Tab. 111.

Leucomeris spectabilis, Don. Prodr. Nepal. p. 169.

Eupatorium candicans, Wall. in Herb. Coet. Ampl. Merc. Angl. Ind. Or. 1824.

Nomen Newarrene, *Bhoea*; Parbutteum, *Phusrae*.

Crescit in monte Sheopore Napaliæ. Ad Srinaghur legit *Kamrup*. Floret mense Aprilis.

ARBOR 12—20-pedalis, erecta, ramosa, cortice griseo, glabro. RAMULI crassi, obtusè angulati, sulcati, supernè, uti omnes partes recentes, tomento niveo, molli densissimè vestiti. FOLIA approximata, sparsa, patentia, brevè petiolata, elliptica, utrinque acuta, deorsum attenuata, integerrima, coriacea, palmaria, pedalia usque ad 15-pollicaria, suprâ saturatè viridia, rugosula, nitida, subtùs niveo-candicantia, costâ nervisque alternantibus elevatis. PETIOLI crassi, semicylindrici, pollicares, tomentosi, ætate nudi, basi intumescens et subarticulati. STIPULÆ nullæ. CORYMBUS terminalis, magnus, ovatus, subfastigiatus, ramosissimus, niveo-tomentosus, *foliis floralibus* lineari-lanceolatis, parvis, frequentibus munitus. PEDUNCULI *communes* elongati, inferiores axillares foliorum supremorum; *partiales* ramosi, *squamis* parvis, vagis, subalternantibus, lanceolatis. FLORES albi, admodum odorati, cylindrici, copiosissimi, fasciculati, brevè pedicellati, pollicares. INVOLUCRUM cylindrico-oblongum, constans foliolis lanceolatis, imbricantibus, acutis, pallidè viridibus, vix ciliatis, inferioribus sensim minoribus, in squamulas pedicelli vagas demum conversis. RECEPTACULUM parvum, nudum. COROLLULÆ sæpiùs 5, tubulosæ, albæ, glabræ, involucri duplò longiores, subfastigiatæ; *tubus* gracilis; *laciniæ* lineares, tubum ferè æquantes, revolutæ. FILAMENTA capillaria; *antheræ* lineares, albæ, basi in aristas duas capillares, parallelas, puberulas desinentes, connatæ in tubum rectum, exsertum, limbum subæquantem. OVARIUM oblongum, sericeo-villosum, coronatum *pappo* copioso, pallidissimè ferrugineo, simplici, scabriusculo, corollâ parùm brevior. STYLUS filiformis, glaber. STIGMA bilobum, lobis obtusis, parallelis, vix exsertis.

This beautiful tree grows to my knowledge only on one spot near Thoka, on Mount Sheopore in Nipal, where I saw it in great perfection and in full flower in April 1821. I have also received it from Srinaghur in Gurwal, where it was found by Kamrup.

Plate CXI. Fig. 1. Flower. 2. Receptacle. 3. Floret. 4. The same opened. 5. Tube of anthers opened.

JUSTICIA CURVIFLORA. Tab. 112.

FRUTICOSA, erecta, ramosa; foliis magnis, ellipticis, utrinque attenuatis, petiolatis, glabris; racemo terminali, oblongo, attenuato, foliis brevior, pilis hyalinis, articulatis densè villosus; fasciculis oppositis, pedunculatis, 3-floris; bracteis lobisque calycis longiusculis, linearibus; tubo corollæ clavato-cylindrico, longissimo, limbo brevi, bilabiato, 5-fido, lobis lanceolatis; antheris oblongis, exsertis, demum levitè divergentibus, loculis æqualibus, parallelis; capsulâ sessili, clavato-tetragonâ, glabrâ, oligospermâ.

Nomen Bengalense, *Bhagbut*.

Crescit in montosis Sillet propinquis, indèque a De Silva in Hortum Calcuttensem missa. Floret fructificatque versus finem anni.

FRUTEX erectus, ramosus, 4—6-pedalis. RAMI superiores obsoletè 4-angulares, ferè cylindrici, supra insertionem foliorum ventricosointumescens; juniores fusciscentes, villosuli. FOLIA ampla, opposita, approximata, ferè decussatim patentia, petiolata, elliptica, acuminata, integerrima, vel obsoletissimè crenulata, glabra, basi attenuato-acuminata, 6—10-pollicaria, quin pedalia, firma et subcoriacea, suprà nitida, saturatè viridia, costâ nervisque subtus prominentibus, vix pubescentibus; *floralia* plura, per totam ferè racemi longitudinem sparsa, subsessilia, angusto-lanceolata, acuta, sesquipollicaria, floribus breviora, utrinque pubescentia. PETIOLUS bipollicaris, cylindricus, suprà vix planiusculus. RACEMUS speciosus, terminalis, sessilis, erectus, oblongus, attenuatus, 6—10-pollicaris, densè obsitus pilis pallidè ferrugineis, subhyalinis, mollibus, articulatis, patentibus, brevibus. FLORES ex flavo rubicundi, ternato-fasciculati, pedunculati, oppositi, bipollicares, tubulosi, patentes. PEDUNCULUS communis rectus, levitè tetragonus, villosus; *partiales pedicellique* teretes, $\frac{1}{2}$ -ungiculares; *bractea* oppositæ, lineares, acuminatæ, villosæ. CALYX ovatus, villosus; *laciniæ* 5, æquales, lineares, acuminatæ, erectiusculæ. COROLLÆ *tubus* bipollicaris, cylindrico-clavatus, parum compressus, levitè curvus, extus densè villosus, intus pubescens; *limbus* tubo ferè quinquies brevior, bilabiatus: *labium superius* adscendens, lobis lanceolatis, obtusis; *inferius* patens, 3-lobum, lobis lanceolatis. FILAMENTA filiformia, glabra, longa, tubo supra basin inserta, parallela. ANTHERÆ oblongæ, subcarnosæ, exsertæ, glabræ, demum parum divergentes, loculis parallelis, æqualibus. OVARIUM glabrum; *stylus* filiformis, pilosus, staminibus parum brevior; *stigma* simplex. CAPSULA clavata, quadrangularis, sessilis, acuta, ultra pollicem longa, glabra, suffulta calycis laciniis elongatis, patulis, ferè unguicularibus, angustissimè linearibus.

This very beautiful species approaches nearest to *Justicia thyrsiflora* Roxb. It is a large shrub, with ample dark green leaves, and long, curved, tubular flowers, of a bright orange-red colour, disposed in a large terminal raceme.

Plate CXII. Fig. 1. Flower. 2. Calyx. 3. Corolla. 4. Anthers.

JUSTICIA CALCARATA. Tab. 113.

FRUTICOSA, erecta, glabra; foliis elliptico-ovatis, acuminatis, deorsum valdè attenuatis; paniculâ terminali, corymbosâ, pubescente; labio corollæ superiore integro, rostrato-acuminato, recurvo, inferiore trifido, lobis ovatis, obtusis; antheris exsertis, divaricatis, loculis inæqualibus, parallelis.

Crescit in montibus Sillet confinibus, ubi detexit F. De Silva. Floret mense Martii.

FRUTEX 5-pedalis, erectus, ramosus, glaber. RAMI cylindrici, tumido-articulati, pallidè virides, glaberrimi. FOLIA patentia, subapproximata, petiolata, elliptico-ovata, acuminata, integerrima, deorsum valdè attenuata et acuta, palmaria, glabra, membranacea, subtus valdè pallida, nervis frequentibus, obliquis, parallelis, gracilibus, costâque elevatis. PETIOLUS gracilis, unguicularis, pollicaris. PANICULA terminalis, ovata, 6-pollicaris, ramosa. PEDUNCULI *primarii* oppositi, elongati, teretes; *secundarii* breves, corymbosi. FLORES magni, albi, fasciculati, pubescentes, insidentes *pedicellis* brevissimis, villosulis, suffultis *bracteis* parvis, lanceolatis. CALYX 5-fidus; *laciniæ* erectæ, breves, lanceolatæ. COROLLÆ extus pubescentis *tubus* cylindricus, ferè $1\frac{1}{2}$ -pollicaris; *limbus* tubo dimidiò brevior, bilabiatus: *labium superius* integrum, lineare, semipollicare, desinens in acumen gracile, subfiliforme, adscendenti-recurvum; *inferius* patens, 3-fidum, laciniis ovatis, obtusis; *faux* pervia, tuberculis duobus, longitudinalibus inter stamina. FILAMENTA breviora, tubo infra faucem inserta, ferè inclusa. ANTHERÆ complanatæ, exsertæ, demum lateralitè deflexæ; *locula* compressa, ovata, parallela, inæqualitè inserta, unum nempè super alterum elevatum. OVARIUM glabrum. STYLUS capillaris.

Closely allied to *Justicia nasuta* Linn., but differing in the greater size of all its parts, and in the leaves being elliptic-ovate, and not lanceolate as in that species.

Plate CXIII. Fig. 1. Calyx. 2. Corolla. 3. Anthers.

ARUM TORTUOSUM. Tab. 114.

CAULESCENS, erectum, læve, monoicum; foliis binis, petiolatis, pedato-digitatis, 9—19-phyllis, foliolis oblongo-lanceolatis, acuminatis, intermediis subpetiolatis; spathæ limbo ovato, cucullato, decurvo; spadiceis monoicæ clavâ longissimâ, gibboso-decurvâ, apice flagelliformi, adscendente, exserto; staminibus distantibus, sterilibus nullis.

Crescit ad loca humida, irrigata montium Napaliæ, florens Aprili et Majo.

PLANTA 3—4-pedalis, lævis, carnosâ. TUBER magnum, depresso-orbiculatum, placentæforme, fuscum, carnosum, 6-pollicare, crassitie 2-pollicari, vertice ad ambitum caulis emittens *radiculas* plures crassas, cylindricas, nudas, pallidas. CAULIS erectus, pallidè viridis, emaculatus, cylindraceo-attenuatus, erectus, basi crassissimâ indutus *vaginis* aliquot magnis, integris, obtusis, striatis, laxiusculè erectis, exterioribus brevibus, ovatis, semiamplexantibus, intimâ ferè pedali, semivaginate, supernè liberâ; mediò distantèr diphyllus; supernè digitum medium vix crassus, nudus; apice florifer. FOLIA duo ampla, distantia, pedalia ad 2-pedalia, patentia, circumscriptione orbiculato-cordata, pedato-digitata. PETIOLUS semipedalis, cylindricus, surgens e vagina adpressa, hinc fissa, ore obliquo, marginato, caule parùm ampliore; apice profundissimè canaliculato-marginatâ breviter bifidus. FOLIOLA 9 ad 19, lanceolato-oblonga, acumine brevi terminata, parùm repando-undulata, margine angustissimè membranaceo, crispatulo, purpurascens, basi attenuata, subcarnosa, suprâ atro-viridia, subtùs pallida, nervosa, costâ magnâ et crassâ, venis duabus intramarginalibus, distantèr parallelis; *intermedium* e bifurcatione petioli reliquis parùm majus, proximaque 6-pollicaria interdùm desinentia in petiolum brevissimum, marginatum, sulco profundo exaratum, nunc auriculatum; *exteriora* sensim breviora, sessilia, basi plùs minùsve semidecurrenti-coadunata. SPATHA terminalis, solitaria, viridis, glaucescens, dimidiâ inferiore parte cylindraceo-convoluta in *tubum* 5-pollicarem, rectum, intùs pallidè purpurascens; superiore parte explanata in *limbum* integrum, ovatum, acutum, apice fornicato-gibbosum, undulatum, costato-striatum, descendens, 6-pollicarem. SPADIX carnosus, attenuatus, spatham longè superans; pars inferior recta, crassa, monoica, rarissimè dioica, infernè pistillifera, supernè staminifera, tubo spathæ omninò inclusa; superior pars sive *clava* extra tubum elevata, pedalis, flagelliformis, nuda, in formam literæ S torta, basi nempè adscendens, violacea, mediò infra limbum spadiceis cucullatum descendens, sensim viridescens et abiens in apicem gracillimum, teretem, retrorsum adscendentem, supra spatham longè exsertum, nunc tractu serpentino curvatum. OVARIA densissimè congesta, numerosa, inferiorem dimidiam basis spadiceis partem occupantia, ovata, subattenuata, 4-spores; *stylus* vix ullus; *stigma* capitatum, subunilaterale. STAMINA superiorem ejusdem partem occupantia, pistillis multò pauciora, gracilia, distantia, patentissima vel subdecurvata; *filamenta* lineas 3 longa, subulato-teretia, terminata *antheris* 3, 4 vel 6, stellatim patentibus; *sterilia* nulla.

This curious species of *Arum* varies considerably in stature, and in the number of leaflets. In general it attains a height of four feet, and each leaf consists of nineteen leaflets. The structure of the spadix is very singular, the middle being bent like a Roman S, ending in a long, ascending, and somewhat recurved apex. No part of the plant possesses any disagreeable smell; and I believe the root is considered innocent, and even esculent, by the mountaineers of Nipal.

Plate CXIV. Fig. 1. Spatha. 2. Spadix. 3. Stamen. 4. Ovary. 5. 6. The same, opened.

ARUM GUTTATUM. Tab. 115.

SUBACAULE, læve, monoicum; folio pedato-palmato, multilobo, lobis oblongis, acuminatis; spathâ oblongâ, acuminatâ, attenuato-acuminatâ, reclinatâ, basi vix tubulosâ; spadiceis monoicæ clavâ elongatâ, exsertâ, erectâ, obtusâ; staminibus pistillisque seorsum densè confertis, filamentis sterilibus intermediis, clavatis vel subulatis.

Crescit in sylvis montium Napaliæ, florens ad finem mensis Aprilis.

TUBER maximum, pugnorum duorum usque ad capitis dimensionem attingens, carnosum, globosum, e vertice lateribusque germinans, transversim et parallelè rugosum, circum ambitum scapi emittens *fibras radicales* plures, breves, nudas, pallidas. FOLIUM peractâ florescentiâ tempore pluvioso proveniens, radicale, pedato-palmatum, circumscriptione rotundato-cordatum, læve, pedale ad sesquipedale, suffultum *petiolo* cylindrico, basi crassissimo, squamis aliquot emarcidis vestito, sursum attenuato, pedali; *lobi* oblongo-lanceolati, valdè acuminati, intermedii 6-pollicares, exteriores breviores, basi contractâ profundius separati, extimi lanceolati, 2-pollicares; membranacei, atrovirides, subtùs costato-nervosi. INFLORESCENTIA radicalis, maxima, solitaria, rarè duæ, suffulta *scapo* crasso, columnari, vix 2-pollicari, pallidè viridi, purpureo-lineato. SQUAMÆ aliquot magnæ, scapum longitudine excedentes (salvâ exteriore ovatâ, brevissimâ) lanceolatæ, attenuato-acutæ, albicantes, membranaceæ, citò emarcescentes. SPATHA magna, crassa et carnosâ, lævis, æstivatione convoluta in cylindrum purpureo-lividum, basi tumidum, indè rectè adscendentem, attenuatum in acumen gracile, curvum; *basis* tubulosa, pollices 2 ad 4 longa, integra, parùm tumida, supernè hinc fissa; *limbus* maximus, pedalis—2-pedalis, oblongo-lanceolatus, planus et expansus, basis concaviusculæ margine irregularitèr sinuato-repando, mediò integerrimus, recurvatus, descendens sensimque attenuatus in acumen convolutum, terræque prostratum; suprâ lætè viridis, maculis frequentissimis, angulatis, atro-purpureis, majusculis guttatus, subtùs purpurascens. SPADIX monoicus, gracilis, spathâ tertio brevior; *inferior pars* 3—4-pollicaris, cylindrica, digitum minimum crassa, basi pistillifera, pollicaris, apice paullò constricto staminifera, semipollicaris, mediò per distantiam 3-pollicarem purpurascens, partim

staminibus sterilibus obsita; *superior pars* sive *clava* erecta, exserta, ferè pedalis, cylindrica, obtusa, pallidè fusca, nuda. OVARIA admodum numerosa, arctissimè conferta, parva, oblongo-cuneata, tetragona vel pentagona, vertice plana, 2-ovulata; *stigmata* adnata, plano-convexa. STAMINA copiosa et densa, parva, clavata, patentia; *filamenta* brevissima; *antheræ* carnosæ, loculis supernè obliquè dehiscentibus; *abortiva* seriebus duabus tribusve ad inferiorem inter pistilla staminaque fertilia interstitii partem occupantia, magna, clavata, obtusa, adscendentia, carnosæ, lutea; præterea alia rudimenta minuta, subulata, cuspidulata, per reliquum spatium sparsa.

This is a very stately *Arum*, with the inflorescence almost sessile on the tuber; and although it has a disagreeable smell, it is far less offensive than many of the other species. The spathe is very large and leathery, sometimes two feet long, hanging down from below the middle, and more or less trailing along the ground; the outer surface is of a livid purple colour, the inner is bright green, covered with innumerable dark purple, angular spots. Before expansion the heat at the bottom of the spathe is very considerable. The root is said to be a strong poison.

Plate CXV. Fig. 1. Inflorescence before expansion. 2. Spadix. 3. Stamen. 4. Ovary. 5. The same, opened.

SALVIA LANATA. Tab. 116.

Salvia lanata, Benth. Synops. Labiat. suprâ, Vol. 1. p. 67.

Habitat in alpinis summis Kamounensibus, Sirmorensibus et Gurwalensibus; primùm detexit Dom. Hardwicke, deindè miserunt Domini Govan, Webb et Gerard. Ipse legi in montibus prope vallem Deyra dictam. Floret fructificatque Martio et Aprili.

PLANTA erecta, palmaris, pedalis bipedalisque, villis longis, canis, mollissimis densè obsita, attritu vix aromatica. RADIX lignosa, longiuscula, subfusiformis, fusca, interdum multiceps, *radiculas* emittens longas, filiformes, ramulosas. CAULES sæpius plures, basi lignosi subadscendentesque, longitudinis variæ, usque ad pennam cygneam crassi, uti foliorum pagina aversa et tota planta recens vestiti lanugine densissimâ, longâ, canâ; supernè attenuati *ramique* obsoletè 4-angulares et 4-sulcati, glanduloso-villosi, subviscosi. FOLIA approximata, interstitiis pluriès longiora, erecto-patentia, acuta vel obtusiuscula, crenulato-denticulata, tenella integerrima, 4—6-pollicaria, deorsum valdè attenuata, sessilia, subamplexicaulia, vel in *petiolum* brevem, marginatum decurrentia, subcarnosa, suprâ rugosa, arachnoideo-sublanosa, subtus densè lanuginosa, costâ latâ et prominente, nervis alternis, obliquis; *superiora* breviora, distantiora, omninò sessilia, basi minùs attenuata. RACEMUS terminalis caulis ramorumque, oblongus, palmaris vel parùm ultrâ, constans verticillastris remotiusculis, 6-floris, suffultis *foliis floralibus* bracteiformibus, deciduis, lato-ovatis, concavis, acuminatis, multinerviis, ciliatis, glanduloso-villosis, suprâ glabriusculis, patentibus, semipollicaribus, albicantibus, nervis acumineque pallidè viridibus. FLORES magni, purpurei, insidentes *pedicellis* 3-linearibus, suffultis *bracteolâ* lineari, brevi. CALYX subcampanulatus, prominentè multinervius, subquinquangularis, transversè venulosus, villosulus, bilabiatus; labium superius ovatum, lato-tricuspidatum, inferius angustius, bidentatum, dentibus lanceolatis, acutis. COROLLA ferè pollicaris; *tubus* pallidus, calyce brevior, supernè levitè ampliatus; *limbus* bilabiatus: *labium superius* adscendens, compressiusculum, oblongum, arcuatum, subretusè obtusum; *inferius* isto parùm brevius, patens, lateribus deflexum, 3-lobum; lobis lateralibus abbreviatis, lanceolatis, margine subrevolutis, intermedio lato, rotundato, obcordato, lateribus sinûs imbricantibus. STAMINA lævia, labio superiore occulta; *filamenta* brevia, subulata; *antheræ* loculum oblongum, sustentum *connectivo* arcuato, longissimo, filiformi, extremitate inferiore dilatato-clavato, compresso, nudo. STIGMA bilobum, subulatum, acutum. ACHENIA majuscula, ovata, obtusa, lævia, fusca.

I have received this beautiful plant from the Sirmore and Gurwal alps, collected by Captain Webb, Dr. Govan, and Lieutenant Gerard. I found it myself on far less elevated mountains, near the valley of Deyra, in fruit, in April 1825. In the Botanic Garden at Calcutta, where it was introduced by Lieutenant Gerard, it flowers in March. I believe with Mr. Benthams that it does not differ from Roxburgh's plant, discovered many years ago by my highly esteemed friend Major-General Hardwicke towards Srinaghur, and called by him in the Asiatic Researches, Vol. 6. p. 349. *S. integrifolia* (a name preoccupied by a Peruvian species). The name of *S. cana*, under which I transmitted specimens to the museum at the India House, and which I subsequently inserted in the Catalogue of Indian Plants (No. 2145.), as also that of the accompanying plate, must therefore be altered accordingly.

Plate CXVI. Fig. 1. Calyx, opened. 2. Corolla. 3. The same, opened. 4. A detached stamen.

SYNOPSIS

Of the Genera and Species of Indian Labiatae enumerated in the Catalogue of the Collections in Dr. Wallich's charge.
By GEORGE BENTHAM, Esq. (Concluded from Vol. I. page 68.)

Tribus 5. PRASIEÆ, Benth. in Bot. Reg. vol. 15. ad calc. n. 1289.
XXXVI. GOMPHOSTEMMA, Wall. Cat. Herb. Ind.—Benth. loc. cit.

Calyx ovato-campanulatus vel tubulosus, subæqualis, 5-dentatus, intus fauce nudâ. Corolla tubo recto, sæpius exserto, supra medium inflato, bilabiata, labiis subæqualibus, superiore erecto, integro, fornicato, inferiore patento trifido. Stamina 4, sub labio superiore adscendentia, inferioribus longioribus. Antheræ per paria approximatae, biloculares, loculis parallelis, transversalibus. Stylus apice subæqualiter bifidus, lobis subulatis. Stigmata minuta. Achenia carnosa.—Herbæ perennes, caulibus sæpius erectis, simplicibus vel basi procumbentibus, radicanibus.

1. *G. strobilinum* (Wall. Cat. Herb. Ind. n. 2151); caule erecto, subsimplici, tomentoso; foliis petiolatis, elliptico-ovatis, basi attenuatis, rugosis, supra hispidis, subtus tomentosis; verticillastris in spicam terminalem congestis, vel infimis remotis, axillaribus; foliis floralibus bracteiformibus, sessilibus, lato-ovatis, irregulariter dentatis, subtus tomentosis, supra glabris, calyces superantibus; calycibus campanulatis, molliter tomentosis, dentibus ovato-lanceolatis; corollis calyce subtriplo longioribus.

β. *elatus*.

Caulis crassus, obtusè tetragonus, sulcatus, 1—2-pedalis; in var. β. 3-pedalis et ultra. Folia caulina (extra petiolum) 6—10 pollices longa, 3—6 pollices lata; floralia pollicaria, supra fusciscentia, glabra vel apicem versus pubescentia, subtus rugosa, tomentosa. Verticillastri nunc omnes spicati, spicâ 4—6-pollicari (in var. β. ferè pedali), crassâ, densâ; nunc inferiores remoti, axillares, pauciflori, vel nonnulli in spiculas breves, axillares approximati. Corolla flava, extus pubescens, tubo calycem superante, vix incurvo, fauce valdè inflatâ. Achenia siccitate rugosissima, glabra, uno alterove fertili, cæteris sæpius abortivis.

Hab. in Ava, ad Meong, Prome, et in monte Taong Dong.

2. *G. viride* (Wall. l. c. n. 2153); caule erecto, simplici, tomentoso-pubescente; foliis breviter petiolatis, elliptico-ovatis, basi attenuatis, flaccidis, supra hispidulis, subtus pilis stellatis pubescentibus; verticillastris paucifloris, in spicam brevem, terminalem congestis; foliis floralibus bracteiformibus, sessilibus, lato-ovatis, subdentatis, supra glabriusculis, subtus villosis, calyces superantibus; calycibus campanulatis, molliter villosis, dentibus lanceolatis; corollis calyce duplo longioribus.

G. strobilino valdè affine sed staturâ humilior. Folia lætè viridia, flaccida, haud rugosa, subtus vix tomentosa. Spica brevis, pauciflora. Calyx amplus. Corollæ tubus brevior quàm in *G. strobilino*.

Hab. in Tavoy.

3. *G. Heyneanum* (Wall. l. c. n. 2152); caule erecto, subsimplici, floccoso-tomentoso; foliis petiolatis, elliptico-ovatis, basi attenuatis, rugosis, supra molliter, subtus densè floccoso-tomentosis; verticillastris in spicam terminalem congestis, vel infimis subremotis, axillaribus; foliis floralibus bracteiformibus, sessilibus, lato-ovatis, crenatis, rugosis, utrinque tomentosis, calyces superantibus; calycibus campanulatis, molliter tomentosis, dentibus ovato-lanceolatis, corollâ vix brevioribus.—*Stachys tomentosa*, Heyne MSS.

Habitus et statura *G. strobilini*; differt tomento floccoso, foliis floralibus supra rugosis, tomentosis, nec glabris, corollis minoribus, tubo incluso, labiis vix calycem superantibus.

Hab. in montibus prope Courtallum.

4. *G. oblongum* (Wall. l. c. n. 2154); caule erecto, simplici, tomentoso; foliis petiolatis, oblongo-ellipticis, basi attenuatis, rugosis, supra hispidulis, subtus densè tomentosis, floralibus conformibus; verticillastris axillaribus, remotis, paucifloris; calycibus campanulatis, tomentosis, dentibus lanceolato-linearibus, elongatis, acutis; corollis calyce triplo longioribus.

Caulis 1—2-pedalis. Folia ferè *G. strobilini* sed minora, angus-

tiora. Verticillastri 2—4, axillares, 6—10-flori. Corolla extus pubescens, ultra 1½-pollicaris; tubo gracili, apice valdè inflato. Bractæ parvæ, lineares, lanceolatae vel ovatae.

Hab. in Tavoy.

5. *G. lucidum* (Wall. l. c. n. 2156); caule erecto, subsimplici, densè rufo-tomentoso; foliis breviter petiolatis, elliptico-ovatis, utrinque attenuatis, supra lucidis, piloso-hispidis, subtus nervosis, densè rufo-tomentosis, floralibus conformibus; verticillastris axillaribus, remotis calycibus tubuloso-campanulatis, tomentosis, dentibus lanceolatis, brevibus; corollis calyce triplo longioribus.

Habitus præcedentis, sed robustior. Caulis 2—3-pedalis. Verticillastri 10—30-flori. Corolla flava, extus densè tomentosa. Dentes calycini vix lineam longi.

Hab. Chappedong oræ Tenasserim et in Pundua.

6. *G. parviflorum* (Wall. l. c. n. 2158); caule erecto, subsimplici, tomentoso; foliis petiolatis, elliptico-ovatis, basi attenuatis, rugosis, supra pubescentibus, subtus tomentosis, floralibus conformibus; verticillastris axillaribus, remotis, laxè multifloris; bracteis oblongo-linearibus, calyces superantibus; calycibus campanulatis, dentibus lanceolato-linearibus; corollis gracilibus, calyce duplo longioribus.

Habitu præcedentibus affine, sed flores in axillis numerosissimi, laxè fasciculati. Corolla flava, extus pubescens, 9—10-lineas longa, tubo gracillimo, fauce minùs inflatâ, limbo parvo.

Hab. in Napalia, Silet, Penang.

7. *G. crinitum* (Wall. l. c. n. 2159); caule erecto, subsimplici, tomentoso; foliis petiolatis, elliptico-ovatis, basi attenuatis, vix rugosis, supra pubescentibus, subtus tomentosis, floralibus conformibus; verticillastris axillaribus, remotis, laxè multifloris; bracteis linearisetaceis, calycem subæquantibus; calycibus tubuloso-campanulatis, fructiferis inflatis, basi glaberrimis, dentibus elongatis, setaceis, hispidis; corollis gracilibus, calyce duplo longioribus.

Habitus inflorescentia et corolla *G. parviflori*; bracteis et calyce distinctissimum; folia ampliora, minùs rugosa.

Hab. in Tavoy.

8. *G. eriocarpon*; caule adscendente, subsimplici, tomentoso; foliis breviter petiolatis, elliptico-oblongis, utrinque attenuatis, grossè dentatis, supra hispidulis, subtus tomentosis, floralibus conformibus; verticillastris remotis, paucifloris; bracteis ovatis, denticulatis; calycibus campanulatis, demùm inflatis, tomentosis, dentibus linearisetaceis; corollis villosis, calyce duplo longioribus; acheniis tomentosis.

Caulis elongatus, tenuior quàm in speciebus præcedentibus. Folia 3—4 pollices longa, sesquipollicem lata, acutè dentata. Verticillastri pauci, sub-10-flori.

Hab. ad Courtallum.

9. *G. ovatum* (Wall. l. c. n. 2155); caule basi radicante, erectiusculo, subsimplici, tomentoso; foliis longè petiolatis, lato-ovatis, basi rotundatis vel vix attenuatis, supra lucidis, hispidulis, subtus molliter tomentosis, floralibus conformibus; verticillastris axillaribus, remotis, multifloris; bracteis lato-ovatis, exterioribus calycem subæquantibus; calycibus campanulatis, villosito-tomentosis, dentibus lanceolato-linearibus; corollis calyce triplo longioribus.

Folia minora et latiora quàm in præcedentibus. Corolla flava, pubescens, ferè sesquipollicaris, tubo calyce duplo longiore, fauce amplissimâ.

Hab. in Napalia.

10. *G. melissifolium* (Wall. l. c. n. 2157); caule basi repente, radicante, ramis adscendentibus, subsimplicibus, tomentosis; foliis petiolatis, ovatis, utrinque attenuatis vel basi rotundatis, glabriusculis, vel supra hispidulis, subtus parcè tomentosis, floralibus conformibus; verticillastris axillaribus, remotis, laxè paucifloris; bracteis ovatis, exterioribus calycem æquantibus; calycibus hispidis, dentibus lan-

ceolato-linearibus; corollis calyce subtriplo longioribus.—*Prasium melissifolium*, Roxb. Hort. Beng. 45.

Præcedenti valde affine; differt caule basi repente, foliis subtus vix tomentosis, floribusque minoribus. Corolla 13—14 lineas longa, tubo gracili, apice parum dilatato.

Hab. in Sillet.

11. *G. velutinum*; caule basi repente, radicante, ramis adscendentibus, subsimplicibus, tomentosis; foliis petiolatis, ovatis, crenatis, basi rotundatis, crassis, utrinque dense velutino-pubescentibus, floralibus conformibus; verticillastris axillaribus, remotis, 2—6-floris; bracteis oblongis, calycem æquantibus; calycibus tomentosis, dentibus ovato-lanceolatis; corollis calyce duplo longioribus.

Species distinctissima, affinis *G. melissifolio*. Folia 12—18 lineas longa, 8—15 lata. Corollæ flavæ, 11—12 lineas longæ, tubo gracili, apice valde dilatato.

Hab. in Sillet.

Tribus 6. OCYMOIDEÆ, Benth. in Bot. Reg. vol. 15. ad calc. n. 1300.

XXXVII. MOSCHOSMA, Reichenb. Consp. p. 171. in nota.

Calyx ovatus, 5-dentatus, dente superiore majore, marginibus non decurrentibus, post anthesin declinatus. Corolla tubo calyce brevior, bilabiata, labio superiore breviter quadrifido, inferiore integerrimo, subplano. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus clavato-capitatus, brevissimè bifidus, stigmatibus in emarginatura minutis.—Herbæ annuæ, paniculato-ramosæ. Flores minuti. Verticillastri pauciflori, nutantes, secundi, in racemos elongatos, graciles, axillares dispositi. Folia floralia et bractæ minutissima vel omnino abortiva.

1. *M. polystachya*; caule acutè tetragono, angulis lævibus vel vix asperis; verticillastris 6—10-floris, laxis, approximatis.—*Ocymum polystachyon*, Linn. Mant. p. 567. *Lumnitzera polystachya*, Jacq.

Caulis 1—2-pedalis, ramosus, gracilis, glaber, vel pilis brevibus raris hispidulus. Folia longè petiolata, ovata, acuminata, crenata, basi rotundata vel cuneata, glabra vel supra tenuissimè pubescentia, subtus pallidiora. Racemi numerosi, graciles, 2—4-pollicares. Verticillastri sæpius 6-flori, rariùs 8—10-flori. Calyces hispiduli, vix bilabiati, dente supremo ovato, obtusiusculo, lateralibus acuminatis, infimis setaceis.

Hab. in Tavoy; ad Rangoon, Prome; in Travancore, Arcot.

2. *M. ocymoides*; caule tetragono, angulis asperis; verticillastris 2-floris, laxis.—*Lumnitzera ocymoides*, Jacq.

Habitus præcedentis, sed folia acutè serrata, supra hispidula, subtus canescentia. Calyces paullo majores, glabriusculi, fructiferi ovato-patentes, distinctè bilabiati, dentibus 3 ovatis, brevissimè acuminatis in labium superius, 2 lanceolatis, acutis in inferius approximatis.

Hab. in Sillet.

XXXVIII. OCYUM, Linn. Gen. 732.

Calyx ovatus vel campanulatus, 5-dentatus, dentis superioris ovato-membranacei marginibus decurrentibus alatus, post anthesin deflexus. Corolla tubo calyce subbreviore, bilabiata, labio superiore 4-fido, inferiore integerrimo, subplano. Stamina 4, declinata. Filamenta libera, inferiora basi sæpius dente vel pilorum fasciculo appendiculata. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice subulato-bifidus, stigmatibus minutis.—Herbæ vel suffrutices. Verticillastri 6-flori, interruptè spicati vel racemosi, spicis subsimplicibus, vel rariùs dense thyrsideo-paniculatis.

§ 1. *Caule herbaceo, sæpius annuo.*

1. *O. Basilicum* (Linn. Sp. 833); caule herbaceo, erecto vel adscendente; foliis petiolatis, ovatis vel oblongis, basi attenuatis, subdentatis, glabris, petiolis ciliatis; racemis simplicibus; calycibus pedicello longioribus, fructiferis reflexis, inflato-campanulatis, ciliatis, basi supra gibbosis, labio superiore orbiculato, concavo, brevissimè acuminato, alis basin calycis non attingentibus, lobis lateralibus ovatis, acutis, infimis setaceo-acuminatis; filamentis inferioribus appendiculatis.

This species, cultivated for so many ages in a great variety of

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climates, has necessarily become exceedingly changeable in its forms. Those which have come under my own observation appear to be reducible to the following races.

α. *pilosum*; caule ramosissimo, erecto vel adscendente; verticillastris remotis, spicatis, pilosissimis.—*O. Basilicum*, Linn. Sp. 833. *O. hispidum*, Lam. Dict. 1. p. 384. *O. pilosum*, Willd. Enum. p. 629. Roxb. Hort. Beng. p. 45. *O. ciliatum*, Herb. Vahl., et Hortul. Plur.

β. *majus*.—*O. majus*, Hortul.

γ. *glabratum*; petiolis calycibusque minùs ciliatis; foliis vix dentatis.—*O. integerrimum*, Willd. Sp. 3. p. 162. *O. caryophyllatum*, Roxb. Hort. Beng. p. 45. *O. Barrelieri*, Roth. Nov. Pl. Sp. p. 278?

δ. *album*; foliis majoribus, latioribus, crassiusculis; verticillastris approximatis, spicis vix ciliatis, canescentibus; corollis majoribus.—*O. album*, Linn. Mant. p. 85. *O. laxum*, Herb. Vahl.

ε. *difforme*; foliis bullatis vel laciniato-dentatis.—*O. bullatum*, Lam. Dict. 1. p. 384. *O. urticæfolium*, Hortul.

ζ. *purpurascens*.—*O. nigrum*, Thouin.

Caulis erectus, ramosissimus, in var. α. sæpè adscendens, laxè ramosus, pedalis vel ultra, basi sæpiùs glaber vel pilis brevibus, reflexis pubescens. Folia ovata, obtusiuscula vel frequentius acuminata, subtus punctata, sæpiùs irregularitèr dentata, rarò integerrima. Racemi sæpè 8—10-pollicares vel ultra; verticillastri inferiores pollicem circitèr distantes, supremi approximati. Folia floralia parva, petiolata, ovata, acuminata, ciliata, calyces paullo superantia, sæpè colorata. Corolla calyce subduplo longior, tubo incluso, fauce subinflata; labium superius latè 4-fidum, lobis sæpè crenatis, undulato-crispis, vel (in varietatibus cultis) fimbriatis. Filamenta staminum inferiorum breviter appendiculata. Achenia lævia. Stylus basi incrassatus.

Hab. α. Sillet, Kantanagur, Oude, Madras. γ. Nathpur, Patna, Penang. β. δ. et ε. in hortis ortæ. ζ. in hortis occurrit, an ex India Orientali allata?

Occurrit etiam spontè in India occidentali, sed non indigenum.

2. *O. canum* (Bot. Mag. 51. t. 2452.); caule herbaceo, erecto, pubescente; foliis petiolatis, ovatis, utrinque attenuatis, subintegerrimis, subtus canescentibus; petiolis ciliatis; racemis simplicibus; calycibus pedicello longioribus, fructiferis reflexis, cauli adpressis, basi supra gibbosis, vix ciliatis, labio superiore orbiculato, concavo, brevissimè acuminato, alis basin calycis non attingentibus, lobis lateralibus ovatis, acutis, infimis setaceis; filamentis inferioribus appendiculatis.—*O. album*, Herb. Roxb. et aliorum, non Linn.

Species *O. Basilico* valde affinis, at distincta videtur. Caulis pedalis vel ultra, erectus, ramosus, pilis brevibus, reflexis, sæpiùs fasciculatis cano-pubescentibus, ad axillas pilis nonnullis longis, albis ciliatus. Folia ovata vel ovato-oblonga, 1—2 pollices longa, integerrima vel subdentata, margine petiolisque pilis raris, longis, albis sæpiùs ciliata, supra ad nervos tenuissimè pubescentia, subtus glabra, punctata. Racemi numerosi, stricti, 6-pollicares vel ultra; verticillastri fructiferi semipollicem distantes. Folia floralia oblonga, petiolata, calyces vix superantia, ciliata. Calyces orbiculato-depressi, sesquilineam lati, parè ciliati. Flores *O. Basilici*, sed minores.

Hab. Sillet; Paghamew, Taong Dong; etiam prope Madras.

3. *O. thyrsiflorum* (Linn. Mant. p. 84); caule herbaceo, erecto, glabriusculo; foliis petiolatis, ovatis, utrinque attenuatis, integerrimis dentatisve, glabris; petiolis nudis; racemis pubescentibus, ramosis, thyrsideo-paniculatis; verticillastris laxis, approximatis; calycibus pedicello longioribus, fructiferis reflexis, dilatato-campanulatis, labio superiore orbiculato, alis basin calycis non attingentibus; filamentis inferioribus appendiculatis.

Hab. . . . (in hortis cultum.)

This plant is frequently cultivated in European as well as Indian gardens, and scarcely differs from the *O. Basilicum*, except in the inflorescence. I have never met with wild specimens in any of the herbariums I have examined, and am therefore inclined to think it may be a mere variety of *O. Basilicum*, raised by cultivation. This opinion is in some measure confirmed by those intermediate states which Miller considered as a distinct species, under the name of *O. medium*.

The *O. minimum*, Linn., which belongs also to this section, is a

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Chilian, and not an East Indian plant. The *O. micranthum*, Willd. (*O. montanum*, Hook. Bot. Mag. v. 57. t. 2996.; *O. campechianum*, Mill. Dict.; *O. peltatum*, Hortul.; *O. frutescens*, Sieb. Pl. Exs. et Auct. plur., an Linn.?) is a native of Brasil, Cayenne, and some of the West Indian Islands. I have also several new herbaceous *Ocymums* from South America.

§. 2. *Caule suffruticoso vel fruticoso.*

4. *O. sanctum* (Linn. Mant. p. 85); caule suffruticoso, ramis adscendentibus, pilosis; foliis petiolatis, oblongo-ovatis, obtusis, dentatis, pubescentibus, nervis petiolisque pilosis; racemis gracilibus, simplicibus vel basi subramosis; foliis floralibus sessilibus, ovatis, pedicello brevioribus; calycibus pedicello brevioribus, nutantibus, glabriusculis, intus fauce nudâ, labio superiore lato, obovato, breviter decurrente, concavo; corollis calycem vix superantibus; filamentis inferioribus basi pilorum fasciculo appendiculatis.—*O. monachorum*, Willd. Sp. 3. p. 159. et Auct. alior., verisimiliter etiam Linn. *O. tomentosum*, Lam. Dict. 1. p. 387. *O. villosum*, Roxb. Hort. Beng. p. 44? *Plectranthus monachorum*, Spr. Syst. 2. p. 690.

Tota planta sæpius purpurascit, in hortis Europæis herbacea, annua, in loco natali suffruticosa. Folia parva, longè petiolata. Racemi laxi, 3—5-pollicares. Calyces parvi. Corolla vix calyce longior, pallidè purpurascens.—Stirps dudum in India culta, villositate staturâque valdè variabilis.

Hab. Monghir; Prome.

5. *O. hirsutum*; caule suffruticoso, diffuso, pubescenti-villoso; foliis petiolatis, oblongis, obtusis, subdentatis, basi attenuatis, villosis; racemis gracilibus; foliis floralibus minutis; calycibus fructiferis deflexis, intus fauce nudâ, labio superiore orbiculato, obtuso, decurrente, alis medium calycis attingentibus; corollis calyce subbrevioribus; filamentis inferioribus basi appendiculatis.

Suffrutex parvulus. Folia vix illa *O. minimi* superantia, *O. sancto* conformia. Racemus tenuis, 2—3-pollicaris. Calyx ferè *O. sancti*. Corolla minutissima.

Hab. Courtallum, Palamcottah.

6. *O. diffusum*; caule suffruticoso, diffuso, tomentoso-villoso; foliis petiolatis, oblongo-ovatis, obtusis, crenatis, tomentoso-villosis, rugosis; racemis simplicibus, abbreviatis, paucifloris; foliis floralibus minutis; calycibus fructiferis oblongis, nutantibus, striatis, glabriusculis, intus fauce villosâ, labio superiore ovato, breviter decurrente, inferioris dentibus elongatis, setaceis; filamentis inferioribus basi appendiculatis(?)

Habitus *O. hirsuti*, sed calyce oblongo, intus villosa distinctum. Corolla minuta, vix calycem excedens. Stamina et stylus imperfectè a me examinata, locus ideò incertus.—An *Orthosiphon*? cui calycis formâ accedit.

Hab. . . . Herb. Wight.

7. *O. ascendens* (Willd. Sp. 3. p. 166.); caule suffruticoso(?), prostrato, ramis pubescentibus; foliis petiolatis, oblongis, obtusis, subdentatis, basi attenuatis, pubescentibus; racemis simplicibus; foliis floralibus acuminatis, calyces æquantibus, deciduis; calycibus fructiferis nutantibus, intus fauce nudâ, tubo striato, labio superiore ovato, acuto, alis medium calycis attingentibus, inferiore margine membranaceo, dilatato, ciliato-dentato; corollis calyce duplò longioribus; staminibus longè exsertis, filamentis inferioribus basi dentatis.—*O. indicum*, Roth. Nov. Pl. Sp. p. 273. *Plectranthus indicus*, Spr. Syst. 2. p. 691. *O. cristatum*, Roxb. Hort. Beng. p. 45.

Suffrutex (?) humilis, præcedentibus affinis sed glabrior, canescens, ramis elongatis. Folia vix majores quàm in *O. minimo*, formâ ferè *O. sancti*. Calyx fructifer *O. gratissimi*.

Hab. . . . Herb. Madr. et Hamilt.

8. *O. gratissimum* (Linn. Sp. 832); caule fruticoso, ramoso, glabro vel supernè villosa; foliis petiolatis, ovatis, acutis, crenatis vel grossè dentatis, basi attenuatis, glabris vel ad costam pubescentibus; racemis simplicibus vel basi subramosis, pubescentibus; foliis floralibus bracteiformibus, lanceolatis, acuminatis, basi hastatis; calycibus pedicellatis, fructiferis nutantibus, labio superiore ovato-oblongo, breviter decurrente, inferioris dentibus brevissimis; corollis calycem vix superantibus; staminibus exsertis, filamentis inferioribus basi appendi-

culatis.—*O. petiolare*, Lam. Dict. 1. p. 385. *O. frutescens*, Mill. Dict.

Hab. Monghir, Nathpur; Penang.

The *O. gratissimum*, Lam. Dict. 1. p. 386. and of several continental gardens, or *O. villosum*, Weinm. in Syllog. Plant. Soc. Ratisb. 1. p. 121., is the *O. suave* of Willd. Enum. p. 629., a Madagascar plant. The *O. viride* Willd., to which should be referred *O. febrifugum*, Lindl. Bot. Reg. v. 9. t. 753. and *O. heptodon*, Beauv. Fl. Ow. et Ben. 2. p. 59. t. 94., is a Senegal species, scarcely differing from *O. gratissimum*.

XXXIX. *ORTHOSIPHON*, Benth. in Bot. Reg. vol. 15. ad calc. n. 1300.

Calyx ovatus vel tubulosus, 5-dentatus, dentis superioris ovato-membranacei marginibus decurrentibus alatus, post anthesin reflexus. Corolla tubo exserti, recto vel incurvo, nec gibboso, nec refracto, fauce æquali vel rariùs inflatâ, bilabiata, labio superiore 3—4-fido, inferiore integerrimo, concavo. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus clavato-capitatus, subinteger vel breviter emarginatus, stigmatibus in emarginatura minutis.—Herbæ perennes suffruticesve. Verticillastri 6-flori, interruptè racemosi, racemis elongatis, simplicibus.

1. *O. rubicundus*; caulibus cæspitosis, basi foliosis, ramosis; foliis oblongo-ovatis, grossè dentatis, basi attenuatis, infimis petiolatis, superioribus sessilibus: corollæ tubo recto, fauce subæquali, calyce duplò longiore.—*Plectranthes rubicunda*, Don Prod. Fl. Nep. p. 116. *Lumnitzera rubicunda*, Spr. Syst. Cur. Post. p. 223.

α. *mollissimus*; foliis utrinque mollissimè villosis.—*Plectranthus mollissimus*, Wall. MSS. *Ocymum triste*, Roth. Nov. Pl. Sp. p. 270?

β. *canescens*; foliis breviter tomentoso-pubescentibus.

γ. *rigidus*; foliis glabriusculis vel brevissimè tomentosis.—*O. rigidum* et *O. Bantulasia*, Herb. Hamilt.

Radix crassus, fibris lateralibus sæpè tuberosis. Caules (cum racemo) pedales vel ultra. Folia minutissimè glanduloso-punctata. Calycis labium superius coloratum. Corolla alba, vel dilutè purpurascens, lineas 6, in speciminibus Napalensibus ferè 8 longa.

Hab. α, Napalia et Kamoun. β, Segain. γ, Nathpur et Monghir.

2. *O. virgatus*; caulibus basi cæspitosis, ramis erectis, strictis; foliis oblongo-lanceolatis, subdentatis, basi attenuatis, sessilibus vel infimis breviter petiolatis; corollis calyce duplò longioribus, tubo rectiusculo, fauce subæquali.—*Plectranthes virgata*, Don Prod. Fl. Nep. p. 116.—*Lumnitzera virgata*, Spr. Syst. Cur. Post. p. 223.

Ab *O. rubicundo* differt caulibus elatioribus, foliis angustioribus, racemo brevior, paucifloro, verticillastri remotioribus, corollis minoribus, tubo vix recto. Calyces colorati.

Hab. Gorakpur; montes Morung.

3. *O. viscosus*; caule basi fruticoso, erecto, ramoso; foliis petiolatis, ovatis, crenatis, basi rotundatis vel cordatis, viscoso-pubescentibus, glanduloso-punctatis, petiolis axillisque pilosis; corollæ tubo recto, calyce duplò longiore, fauce subæquali.—*Ocymum viscosum*, Wight. Herb. vix Roth. Nov. Pl. Sp. p. 274.

Inflorescentia *O. rubicundi*, sed habitu et foliorum formâ diversus. Rami petioli et nervi foliorum pilis longis, albidis, viscosis sæpius hispidi.

Hab. Dindygul.

4. *O. tomentosus*; caule basi suffruticoso, ramis adscendentibus, tomentoso-pubescentibus; foliis petiolatis, ovatis, crenatis, basi cuneatis vel rotundatis, utrinque tomentosis, glanduloso-punctatis; racemis gracilibus, paucifloris; corollis calyce vix duplò longioribus, tubo recto, fauce subæquali; staminibus corollâ brevioribus.—*Ocymum viscosum*, Roth. Nov. Pl. Sp. p. 274.?

Suffrutex humilis, ramosissimus, habitu *Ocymi diffusi* et *hirsuti*. Folia vix 8—10 lineas longa, 6—8 lineas lata. Corolla *Orthosiphonis amæni*.

Hab. . . . Herb. Wight. (specimina cum *Ocymo hirsuto* mixta.)

5. *O. glabratus*; caulibus adscendentibus, ramosis, glabris; foliis longè petiolatis, ovatis, acutis, dentatis, basi rotundatis vel subcor-

datis, glabriusculis; racemis gracilibus; corollis subincurvis, tubo calyce duplò longiore, fauce subæquali; staminibus corollâ brevioribus.—*Ocymum thymiflorum*, Roth. Nov. Pl. Sp. p. 269? at folia minora.

Affinis præcedenti, sed major, glabratus. Calyces parvi, fructiferi ovati.

Hab. Courtallum.

6. *O. incurvus*; caule basi procumbente, adscendente; foliis petiolatis, oblongis, crenatis, utrinque attenuatis, tenuissimè pubescentibus; verticillastris subsecundis; corollis villosis, incurvis, calyce triplò longioribus, fauce subæquali; staminibus corollam æquantibus.

Calyces fructiferi elongati. Corollæ valdè incurvæ, 9 lineas longæ. Hab. Sillet.

7. *O. scapiger*; caulibus e basi crassa, repente, radicante erectis, simplicibus, scapiformibus; foliis ad basin caulis approximatis, petiolatis, ovato-oblongis, grossè dentatis, basi attenuatis, glabriusculis; racemis elongatis; corollis calyce subtriplò longioribus, tubo recto, fauce amplissimâ; staminibus vix corollâ longioribus.

Folia ferè omnia radicalia, limbo 3—5 pollices longo, 1½—2 pollices lato. Corolla cœrulea, 7—8 lineas longa, fauce valdè inflatâ, campanulatâ. Labium superius brevissimum, 4-dentatum, inferius elongatum, concavum. Genitalia breviter exserta.

Hab. Napalia.

8. *O. stamineus*; caule herbaceo, erecto, subramoso; foliis petiolatis, ovatis, acuminatis, grossè dentatis, basi cuneatis, rotundatis vel supremis subcordatis; racemis laxis; corollis calyce triplò longioribus, tubo subrecto, labio superiore dilatato, genitalibus longissimè exsertis. —*Ocymum grandiflorum*, Blume Bydr. p. 835. non L'Hér.

Herba 2—3-pedalis, glabriuscula vel tenuissimè tomentoso-pubescentis. Inflorescentia et calyx omninò generis. Flores candidi, pulcherrimi, ferè *Clerodendri*. Corolla 8—9-linearis, tubo gracili; labium superius dilatatum, quadridentatum, inferius lineare, canaliculatum. Genitalia capillacea, corollâ duplò vel ferè triplò longiora.

Hab. Taong Dong Avæ; Martabania.

XL. COLEUS, Lour. Fl. Coch.

Calyx ovato-campanulatus, fructifer erectus vel reflexus, 5-dentatus, dente superiore ovato-membranaceo, marginibus rariùs decurrentibus. Corolla tubo exserto, refracto vel gibbo, fauce æquali vel inflatâ, balabiata, labio superiore 3—4-fido, inferiore integro, elongato, concavo, genitalia involvente. Stamina 4, declinata. Filamenta edentula, basi tubo stylum vaginante connexa. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice subulatus, æqualitèr bifidus. Herbæ vel suffrutices. Verticillastri sæpiùs multiflori, nunc densè vel interruptè spicati vel racemosi, nunc laxi, cymiformes, paniculati.

§ 1. *Calceolus*. Verticillastri 6—10-flori, spicati vel racemosi. Calyces fructiferi deflexi, fauce intùs villosâ?

1. *C. barbatus*; caule basi fruticoso, adscendente, ramoso, tomentoso-hispido; foliis petiolatis, ovatis, crenatis, basi attenuatis, molitèr tomentosis, junioribus strigoso-hispidis; racemis simplicibus; verticillastris 6—10-floris, distinctis, remotis; foliis floralibus membranaceis, lato-ovatis, acuminatis, in apice racemorum comosis, per anthesin deciduis; calycibus fructiferis deflexis, hispidis, fauce intùs villosâ, labio superiore ovato, acuto, membranaceo, subdecurrente, inferioris dentibus lanceolatis acutis, subæqualibus; corollæ tubo suprâ gibboso, refracto, vix calycem excedente, labio inferiore stipitato, maximo, concavo, cucullato; acheniis lævissimis.—*Plectranthus Forskôhlii*, Willd. Sp. 3. p. 169. Bot. Mag. v. 16. t. 2036. an Vahl? *P. crassifolius*, Willd. l. c. an Vahl? *Ocymum hadiense* et *O. zatarhendi*, Forsk.? *Plectranthus barbatus*, Andr. Bot. Rep. t. 594. *P. comosus*, Bot. Mag. v. 49. t. 2318.

The floral leaves frequently fall off so early that several authors have distinguished two species, one with them, another without.

Hab. Napalia, Kamaon.

2. *C. spicatus*; caule herbaceo, basi procumbente, ramis adscendentibus, patentim pilosis; foliis petiolatis, obovatis, subintegerrimis,

basi attenuatis, carnosis, tenuissimè pubescentibus; verticillastris 6—10-floris, in spicas elongatas, terminales approximatis; foliis floralibus membranaceis, lato-ovatis, concavis, acutis, ad apicem spicarum comosis, demùm deciduis; calycibus fructiferis deflexis, hispidis, fauce intùs villosissimâ; labio superiore lato-rotundato, membranaceo, subdecurrente, inferioris dentibus lato-lanceolatis, acutis; corollæ tubo suprâ gibboso, refracto; acheniis villosissimis.—*Plectranthus spicatus*, Herb. Wight. *P. caninus*, Roth. Nov. Pl. Spec. p. 279? *P. monadelphus*, Roxb. Hort. Beng. p. 45. Roth Nov. Pl. Sp. p. 267.

Racemus semipedalis pedalisve, densiflorus. Bractæ multò breviores quàm in *C. barbato*, latissimæ, concavæ, margine ciliatæ. Corolla *C. barbati*, at minor.

Hab. Mysore.

§ 2. *Aromaria*.—Verticillastri globosi, multiflori, simpliciter racemosi; calyces fructiferi suberecti, fauce intùs subnudâ.

3. *C. aromaticus*; caule basi fruticoso, ramoso, tomentoso-hispido; foliis petiolatis, lato-ovatis, crenatis, basi rotundatis, crassis, utrinque villosis; racemis simplicibus; verticillastris multifloris, globosis, distinctis, subremotis; foliis floralibus ovatis, acuminatis, calycem vix æquantibus; calycibus fructiferis suberectis, tomentoso-candidis, labio superiore elongato, ovato, membranaceo, acuto, inferioris dentibus brevioribus, setaceis, fauce intùs subnudâ; corollæ tubo basi infrâ gibbo, refracto, fauce inflatâ, labio superiore brevissimo, inferiore elongato, concavo.—*Plectranthus aromaticus*, Roxb. Hort. Beng. p. 45.

Calyces parvi, 30 vel ultrâ in quoque verticillastro.

Hab. Patna.

4. *C. crassifolius*; caule erecto, ramoso, tomentoso; foliis petiolatis, lato-ovatis, grossè dentatis, basi rotundatis, crassis, utrinque piloso-hispidis; racemis simplicibus; verticillastris multifloris, globosis, distinctis, infimis remotis, supremis subspicatis; foliis floralibus ovatis, mucronatis, calyces superantibus, per anthesin deciduis; calycibus fructiferis suberectis, rufo-hispidis, intùs fauce nudâ, labio superiore elongato, oblongo, obtuso, concavo, membranaceo; inferioris dentibus brevioribus, setaceis; corollæ tubo basi infrâ subgibbo, refracto, fauce vix inflatâ, labio superiore inferiore dimidiò brevior.—*Plectranthus crassifolius*, Herb. Wight. non Willd.

C. aromaticus affinis. Statura elatior. Folia majora, minùs hirsuta. Corollæ minores, fauce minùs inflatâ, labio superiori productiore.

Hab. . . . Herb. Wight.

§ 3. *Solenostemon* (Herb. Vahl).—Verticillastri laxè multiflori, sæpiùs cymosi, racemosi vel paniculati, calyces fructiferi declinati, fauce intùs nudâ.

5. *C. rugosus*; caule erecto, subramoso, carnosio, subglabro; foliis longè petiolatis, ovatis, obtusè crenatis, basi cuneatis, integerrimis, in petiolum decurrentibus, crassis, carnosis, rugosis, nervosis, glabris, floralibus bracteiformibus, acuminatis, calyces vix superantibus; verticillastris laxiusculis, multifloris, spicatis, infimis distinctis; calycibus hispidulis, declinatis, intùs fauce nudâ, lobo superiore oblongo, acuto, vix decurrente, inferioribus minutis, lateralibus latis obtusis, infimis setaceis.—*Dracocephalum rugosum*, Herb. Madr.

Spica bipollicaris. Verticillastri 10—15-flori. Corollas vix examinare potui, sed ob affinitatem cum *C. africano* hanc speciem ad *Coleum* retuli. Stylus videtur apice complanato-bifidus.

Hab. . . . Herb. Madr.

6. *C. scutellarioides*; caule basi fruticoso, erecto, ramoso, glabro vel tenuissimè tomentoso; foliis petiolatis, ovatis, acuminatis, dentatis, basi rotundatis, glabris vel vix tomentosis; racemis gracilibus, elongatis, simplicibus vel basi subramosis; foliis floralibus ovatis, acuminatis, membranaceis, deciduis, verticillastro brevioribus; verticillastris laxè multifloris, pedunculo communi subnullo, pedicellis ramos breves subæquantibus; calycibus fructiferis declinatis, membranaceis, glabriusculis, fauce intùs nudâ, dente superiore ovato, acutiusculo, non decurrente, lateralibus brevioribus, ovatis, obtusissimis, infimis longioribus, lanceolatis, acutis, ferè ad apicem connatis; corollæ tubo basi infrâ gibbo, erecto, medio refracto, fauce vix inflatâ, labio inferiore elongato, porrecto.—*Ocymum scutellarioides*, Linn. Sp. 834.

Plectranthus scutellarioides, Br. Prod. p. 506. vix Blume Bydr. cui verticillastri secundi.

Hab.

7. *C. atropurpureus*; caule basi fruticoso (?), erecto, ramoso, tenuissimè pubescente; foliis petiolatis, lato-ovatis, crenatis, basi rotundatis, tenuissimè pubescentibus; racemis simplicibus; verticillastri laxis, pedunculo communi subnullo, ramis elongatis, multifloris, pedicellis brevissimis; foliis floralibus ovatis, minutis, deciduis; calycibus fructiferis declinatis, membranaceis, pubescentibus, dente superiore ovato, acutiusculo, laterales ovatos, obtusissimos æquante, infimis duplò longioribus, acutis, ultra medium connatis; corollæ tubo basi infrà gibbo, medio refracto, fauce subdilatata, labio inferiore elongato, porrecto.—*Plectranthus atropurpureus*, Wall. MSS. *P. ingratus*, Blume Byd. p. 837? cui verò folia basi cuneata nec rotundata.

Folia utrinq. purpurascens.—Affinis *C. scutellarioidi* sed inflorescentiâ distinctissimus.

β. *ramosus*; racemis subpaniculatis, foliis minùs purpurascens, pedicellis longioribus;—an species propria?

Hab. Singapore. β. Penang.

8. *C. paniculatus*; caule basi procumbente, ramoso, glabriusculo; foliis petiolatis, lato-ovatis, inciso-dentatis, basi rotundatis, integerrimis, crassis, carnis, hispidulis; racemo terminali, paniculiformi; verticillastri cymiformibus, laxissimis, pedunculo communi, ramis pedicellisq. elongatis; foliis floralibus ovatis, membranaceis, acuminatis, ad apicem racemi comosis, per anthesin deciduis; calycibus fructiferis membranaceis, declinatis, dente superiore ovato, vix decurrente, lateralibus infimisq. lanceolatis subæqualibus; corollæ tubo basi subgibbo, medio refracto, fauce dilatata, labio inferiore elongato, concavo.

Folia *C. canini*, vel *crassifolii*. Corolla ferè *C. Malabarici*. Inflorescentiâ ab omnibus distincta.

Hab. Herb. Wight.

9. *C. malabaricus*; caule erecto (?), ramoso, tenuitè pubescente; foliis petiolatis, amplis, lato-ovatis, crenatis, basi rotundatis, suprâ glabriusculis, subtùs glanduloso-punctatis; racemis laxè paniculato-ramosis; verticillastri sub-10-floris, laxiusculis, pedunculo communi subnullo, ramis abbreviatis; foliis floralibus ovatis, minutis, deciduis; calycibus fructiferis glabris, membranaceis, nutantibus, intùs fauce nudâ, dente supremo ovato, acutiusculo, marginibus revolutis, 4 inferioribus lanceolatis, acutis, 2 lateralibus supremum æquantibus, 2 infimis longioribus, ad basin cum lateralibus, ultra medium invicem connatis; corollæ tubo basi infrà gibbo, supra medium refracto, fauce dilatata, labio inferiore elongato, foliato.—*Plectranthus malabaricus*, Herb. Madr.

Hab. Travancore.

To this section should be referred *C. africanus* from Senegal, which is inscribed *Ocimum scutellarioides* in Vahl's herbarium, and also, in another hand-writing, *Solenostemon scutellarioides*. I have seen the same species from that country in other herbaria, and believe it to be the same as *Ocimum monostachyum* of Palisot de Beauvois, as well as can be made out from his figures. Blume's *Plectranthi*, as also several new species I possess from Ceylon and from the Indian Archipelago, belong to this same section of *Coleus*.

XLI. PLECTRANTHUS. *L'Hér. Stirp.*

Calyx per anthesin campanulatus, 5-dentatus, dentibus æqualibus vel superiore sæpiùs majore, post anthesin declinatus, incurvus, basi gibbus vel inflatus, ore sæpiùs bilabiatus; vel rariùs erectus, tubulosus, æqualis. Corolla tubo exserto, basi gibbo vel calcarato, refracto vel rariùs subrecto, fauce æquali vel rariùs inflatâ, bilabiata, labio superiore 3—6-fido, inferiore longiore, concavo. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus, vel rariùs subbiloculares, loculis divaricatis. Stylus apice subulatus, æqualitè bifidus, stigmatibus minutis.—Herbæ, suffrutes, fruticesve. Verticillastri laxi, sæpiùs cymosi, multiflori, racemoso-paniculati.

§ 1. *Coleoides*.—Calyx fructifer declinatus, dente superiore ovato, subdecurrente, 4 inferioribus acutis, sæpiùs plùs minùsve inter se connatis. Corolla ecalcarata.

1. *P. cordifolius* (Don Prod. Fl. Nep. p. 116.); caule herbaceo, erecto, ramoso, basi tumido, carnosus; foliis petiolatis, lato-ovatis, crenatis, basi cordatis, subglabris, floralibus bracteiformibus, ovato-cuneatis, pedicello brevioribus; racemis laxis, paniculatis; verticillastri laxis, secundis, paucifloris; calycibus fructiferis declinatis, ovatis, dente superiore ovato, acuminato, non decurrente, inferioribus longioribus, lanceolatis, acutis, infimis basi cum lateralibus, ultra medium invicem connatis; corollâ calyce triplò longiore, basi infrà subgibbosâ, tubo refracto, fauce inflatâ, staminibus exsertis.—*Ocimum maypurensis*, Roth. Nov. Pl. Sp. p. 271. *Plectranthus maypurensis*, Spr. Syst. 2. p. 691. *P. secundus*, Roxb. Hort. Beng. p. 45?

Radix tuberosa. Caulis basi crassus, carnosus, hinc indè tumidus, tenuitè pubescens. Folia 2—3-pollicaria, cano-pubescentia, subcarnosa, eglandulosa. Racemi 4—6-pollicares, basi ramosi, ad apicem caulis laxè paniculati. Verticillastri laxiflori, pedunculo communi utrinq. subnullo, ramis abbreviatis, pedicellis 4—8-linearibus. Calyces per anthesin minuti, fructiferi 4 lineas longi, vel ultrâ, membranacei. Corollæ labium superius brevissimè 4-dentatum, inferius longius, latum, concavum.

Hab. Napalia, Mysore.

2. *P. subincisus*; caule herbaceo, erecto, ramoso, vix carnosus; foliis petiolatis, lato-ovatis, inciso-dentatis, basi cordatis, glabriusculis; floralibus bracteiformibus, ovatis, pedicello brevioribus; verticillastri laxis, secundis, paucifloris; calycibus fructiferis declinatis, ovatis, dente superiore ovato, subdecurrente, inferioribus longioribus, lanceolatis, acutis, infimis basi cum lateralibus, ultra medium inter se connatis; corollâ calyce quadruplò longiore, tubo tenui, basi infrà subgibbosâ, medio refracto, fauce subinflatâ; staminibus corollâ brevioribus.

A *P. cordifolio* differt staturâ minore, caule minùs carnosus, foliis profundè crenatis, subincisus, corollis longioribus, angustioribus, calycis dente superiore latiore, obtuso, subdecurrente.

Hab. Courtallum.

To this section belong the whole of the New Holland, African and Madagascar *Plectranthi*, with the exception of the *P. fruticosus*, and perhaps one or two from Madagascar, which constitute the section *Germanea*.

§ 2. *Euplectranthus*. Calyx fructifer declinatus, æqualitè 5-dentatus, vel sæpiùs bilabiatus, labio superiore e dentibus tribus, inferiore e duobus, constante.

3. *P. scrophularioides* (Wall. MSS.); caule herbaceo, erecto, ramoso, subglabro; foliis longè petiolatis, lato-ovatis, crenatis, basi rotundatis, inæqualitè cordatis vel subattenuatis, floralibus minutis, deciduis; paniculis laxis, bracteis lanceolatis, minutis; calycibus fructiferis declinatis, profundè bilabiatis, inflatis, labio superiore adscendente, tridentato, inferiore concavo, porrecto, breviter bidentato, dentibus omnibus obtusis; corollis inflatis, suprâ gibbosis, calyce subtriplò longioribus; staminibus exsertis.

Caulis 3—4-pedalis, ramosissimus, subcarnosus, angulis pubescentibus. Folia palmaria, subcarnosa, basi sæpiùs inæqualitè cordata, nunc rotundata vel attenuata, suprâ hispidula, subtùs glabra, glandulosa, nervis elevatis, carnis, pubescentibus; petioli inferiorum semipedales vel ultrâ, superiorum breviores, nunc brevissimi. Cymæ laxi, pedunculo communi semipollicari, ramis 1—2-pollicaribus, pedicellis 4—5-linearibus, racemos paniculiformes, basi ramosos formantes. Calyx tenuissimè pubescens, submembranaceus, nervosus, ferè *Scrophulariæ*. Corolla, teste Wallichio, ex albo rosea, uti tota planta inodora. Labium superius adscendens, quadrifidum, lobis crenulatis, inferiore angustiore, longiore, integro. Filamenta basi villosa.

Hab. Napalia, Kamaon.

4. *P. oblongifolius* (Wall. MSS.); caule herbaceo, adscendente, ramoso, glabro; foliis petiolatis, oblongis, dentatis, utrinq. attenuatis, suprâ hispidulis, subtùs glabris; paniculis laxis, ramosis, multifloris; foliis floralibus bracteisq. minutissimis subnullis; calycibus declinatis, vix bilabiatis, obtusè 5-dentatis, per anthesin ovatis, striatis, fructiferis lagenæformibus, basi inflatis, ore contracto; corollis vix gibbosis, declinatis, calyce triplò longioribus; staminibus corollâ brevioribus.

Caulis 3—4-pedalis, non carnosus, ferè omnino glaber. Folia extra petiolum pollices 4—6 longa, 2 pollices lata, valdè acuminata et basi longè attenuata, subtùs glandulosa. Racemi paniculiformes, secundi, paniculato-ramosi. Cymis laxi, pedunculo communi semipollicari, ramis gracilibus, utrinq̃ue 3—4-floris. Calyx glaber, striatus, glandulis rubris obiectus, per anthesin minutus, fructifer basi valdè inflatus, submembranaceus, nervosus, lineas 3 longus. Corolla 3-linearis, tubo subinflato.

Hab. Napalia.

5. *P. striatus*; caule herbaceo, erecto, ramoso, subglabro; foliis subsessilibus, ovatis, acuminatis, crenatis, basi cuneatis, rigidis, suprà hispidis, subtùs glabris, densè glandulosi; paniculis laxi, ramosissimis, multifloris; foliis floralibus ovatis, pedunculo multò brevioribus, supremis bracteisque minutis; calycibus declinatis, oblongis, subbilabiatis, dentibus obtusis, vix inæqualibus, fructiferis incurvis, striatis, glabris, glandulosi; corollis basi suprà subgibbis, declinatis, calyce quadruplò longioribus; staminibus breviter exsertis.

Caulis 2—3-pedalis, glaber vel tenuissimè cano-pubescent. Folia pollices 2 longa, sesquipollicem lata, superiora minora, suprema minuta. Racemi paniculiformes, vix secundi, paniculato-ramosissimi. Cymis laxi, pedunculo communi sæpè pollicari vel ultrà, ramis gracilibus elongatis. Calyx fructifer non inflatus sed valdè incurvus, basi declinatus, ore adscendente, profundè striatus. Corolla lineas 3 longa, tubus elongatus tenuis, labium superius brevè adscendens, extùs glandulosum, inferius ovatum, concavum. Stamina breviter, stylus longè exserta. Achenia rugoso-punctata.

Hab. Sillet.

6. *P. hispidus*; caule herbaceo, erecto, ramoso, pubescente; foliis subsessilibus, ovatis, acuminatis, dentatis, basi cuneatis, rigidis, suprà hispidis, subtùs pubescentibus, densè glandulosi; paniculis laxi, ramosissimis, multifloris; foliis floralibus ovatis, pedunculo multò brevioribus, supremis bracteisque minutis; calycibus declinatis, oblongis, obtusè 5-dentatis, fructiferis bilabiatis, vix incurvis, hispidissimis; corollis basi suprà subgibbis, calyce quadruplò longioribus; staminibus corollà vix longioribus.

β. *glabrior*.

Statura et habitus *P. striati*, a quo differt pubescentiâ, et præsertim calycibus basi subinflatis, minùs incurvis, bilabiatis, pilis articulatis densissimè obiectis.

Hab. Sillet. β. Napalia.

7. *P. Gerardianus*; caule herbaceo, erecto, subramoso, subglabro; foliis ovatis, acuminatis, crenatis, suprà hispidulis, subtùs glabris, parcè glandulosi, inferioribus petiolatis, basi attenuatis, superioribus subsessilibus, basi cordatis, floralibus pedunculo brevioribus, supremis bracteisque minutis; racemis paniculiformibus, vix ramosis; cymis laxi, gracilibus, multifloris; calycibus declinatis, oblongis, bilabiatis, dentibus obtusis, fructiferis incurvis, striatis, glabris, vix glandulosi; corollis basi suprà subgibbis, calyce quadruplò longioribus.—*Hyssopus lophanthoides*, Don. Prod. Nep. p. 110.

Affinis *P. striato*. Differt staturâ minore, foliis membranaceis, majoribus, racemo subsimplici, rachi pubescente. An mera varietas?

Hab. Kamaon.

8. *P. Coëtsa* (Don. Prod. Nep. p. 117.); caule herbaceo, erecto, ramoso, cano-pubescente; foliis petiolatis, ovatis, utrinq̃ue attenuatis, medio crenatis, suprà hispidulis, subtùs pubescentibus, tenuissimè glandulosi, floralibus inferioribus conformibus, supremis minutis; bracteis minutissimis, setaceis; paniculis ramosissimis, multifloris; calycibus declinatis, oblongis, bilabiatis, dentibus ovatis, acutiusculis, subæqualibus, fructiferis incurvis, striatis, cano-pubescentibus, vix glandulosi; corollis basi suprà gibbis, tubo refracto, calyce subtriplò longioribus.—*Ocimum Coëtsa*, Spr. Syst. Cur. Post. p. 223.

Caulis 2—3-pedalis. Folia sæpiùs bipollicaria, longè acuminata, rugosula, suprà viridia, subtùs sæpè canescentia. Panicula ampla, multiflora, canescens. Racemi paniculiformes, secundi, ramosissimi. Cymis graciles, laxi, multiflori, pedunculo communi 3—4-lineari ramisque filiformibus. Corolla cœrulea, labiis profundis, patentibus,

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superiore quadridentato, inferiore integro, concavo, porrecto. Stamina corollâ breviora. Stylus exsertus. Filamenta omnia libera, nec basi connata ut vult Don. l. c.

Hab. Napalia, Kamaon, Taong Dong mons Avæ.

9. *P. menthoides*; caule herbaceo, erecto, ramoso, cano-pubescente; foliis petiolatis, ovatis, utrinq̃ue attenuatis, grossè dentatis, pubescentibus, floralibus conformibus, minoribus, supremis bracteisque minutis; racemis paucifloris, laxiusculis, subpaniculatis, calycibus fructiferis declinatis, oblongis, incurvis (?), cano-pubescentibus, dentibus acutiusculis, supremo latiore; corollis basi suprà subgibbis, tubo vix refracto, fauce inflatâ; staminibus corollâ brevioribus, antheris subbilocularibus.

Habitu *P. Coëtsæ* affinis, sed racemis parvis, paucifloris, corollis vix refractis, antherisque subbilocularibus distinctus. Specimina in herbario vix fructifera.

Hab. . . . Herb. Wight.

10. *P. rugosus* (Wall. MSS.); caule fruticoso, erecto, ramis pubescentibus incanis; foliis petiolatis, ovatis, obtusis, crenulatis, basi rotundatis, suprà pubescentibus rugosis, subtùs cano-tomentosis, reticulato-nervosis, floralibus conformibus, supremis pedunculo brevioribus; cymis laxi, secundis, racemosi; bracteis minutis; calycibus declinatis, oblongis, vix bilabiatis, dentibus lanceolatis, acutis, subæqualibus, fructiferis subincurvis, striatis, pubescentibus; corollis calyce duplò longioribus, tubo suprà gibbo, refracto, staminibus corollâ brevioribus.—*Ocimum densiflorum*, Roth. Nov. Pl. Sp. p. 275?

β. *tomentosus*; foliis acutioribus cauleque densè rufo-tomentosis. An species distincta?

Frutex ramosissimus, cortice laxo, griseo, ramis tetragonis, densè pubescentibus. Folia vix uncialia, sæpiùs semiuncialia, exactè ovata, more *Salviæ officinalis* rugosula, subtùs in speciminibus cultis pallida, in spontaneis candidissima. Cymis utrinq̃ue sub-5-flori, inferiores folio breviores, pedunculo communi 3—4-lineari, ramis brevibus, pedicellis 3—4-linearibus. Flores ferè *P. Coëtsæ*, at corolla minor, alba vel pallidissimè cœrulescens: calyx fructifer paullò major.

Hab. Choor. β. . . . Herb. Wight.

11. *P. repens* (Wall. MSS.); caule basi repente, radicante, adscendente, subsimplici, hirsuto; foliis petiolatis, ovato-rotundatis, obtusis, grossè crenatis, basi rotundatis vel cordatis, utrinq̃ue hirsutis, subtùs glandulosi, floralibus inferioribus ovatis, sessilibus, supremis bracteisque minutis; racemo laxo, subsimplici, cymis pedunculatis; calycibus fructiferis, declinatis, oblongis, subincurvis, striatis, glabris, dentibus vix inæqualibus, lanceolatis, acutis; corollis calyce subtriplò longioribus, basi suprà gibbis; staminibus corollâ brevioribus.

Planta humilis, semipedalis pedalisve, ex omni parte pilis longis articulatis vestita. Folia ad basin caulis approximata, infima longè petiolata, suprema subsessilia. Racemus subnudus, simplex, vel basi ramosus. Cymis inferiores distantes, pedunculo communi semipollicari, racemis pedicellisque gracilibus, elongatis, glabris, superiores approximati, breviores, densiores, subsecundi. Flores magnitudine *P. striati*, sed corolla suprà magis gibba.

Hab. Napalia.

12. *P. montanus*; caule herbaceo, erecto, supernè ramoso, tomentoso-villoso; foliis breviter petiolatis, ovatis, obtusis, crassis, rugosis, densè tomentosis; verticillastris subdistinctis, densis, multifloris; calycibus fructiferis declinatis, incurvis, tomentosis, subæqualitèr obtusè 5-dentatis, . . . —*Ocimum montanum*, Herb. Wight.

Herba videtur pedalis. Caulis basi glaber, crassus. Folia inferiora in speciminibus desunt, superiora opposita, parva, densè rufo-tomentosa. Panicula ferè *P. ternifolii* sed minor. Calyx declinatus, incurvus nec teres, erectus. Corollam non vidi.

Hab. . . . Herb. Wight.

§. 3. *Pyramidium*.—Calyx fructifer erectus, cylindricus, æqualitèr 5-dentatus.

13. *P. ternifolius* (Don. Prod. Nep. p. 117); caule herbaceo (?), erecto, subramoso, tomentoso-villoso; foliis ternatim verticillatis, subsessilibus, lanceolato-oblongis, acuminatis, serratis, basi crenatis, rugosis, villosis; paniculis ramosis, densè pyramidalis, multifloris, tomentoso-lanatis; calycibus fructiferis cylindricis, erectis, striatis,

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æqualiter 5-dentatis; corollis suprâ gibbis, refractis, calyce subtriplo longioribus; staminibus corollam æquantibus.—*Ocymum ternifolium*, Spr. Syst. Cur. Post. p. 224.; non *P. ternatus*, Sims Bot. Mag. v. 51. t. 2460.

Caulis stricti, 2—3-pedales, sexangulares, undique dense rufo-villosi vel tomentosi. Folia pollices 3—5 longa, pollicem lata, suprâ elevato-rugosa, villosula, subtus venosa, pilis stellatis, rufo-vel cano-tomentosa; floralia conformia, minora, suprema minuta. Racemi rarò subsolitarii, sæpius numerosi, stricti, paniculam densam, elongato-pyramidatam formantes. Verticillastri densi, secundi, multiflori, cymis ternatim verticillatis, vel sæpius uno abortiente oppositis, pedunculo communi lineas 2, ramis lineas 4—5 longis, pedicellis brevissimis. Bractæ lineares, minutæ. Calyces per anthesin campanulati, fructiferi elongati, tubulosi, stricti, densissime villosi, dentibus ovatis, obtusis. Corolla extus villosissima, labio superiore patente, 4-dentato, inferiore ovato, concavo. Filamenta libera nec basi connata ut apud Don. l. c.

Hab. Napalia, Kamaon, et Taong Dong Avæ.

XLII. GENIOSPORUM, Wall. MSS.—*Benth. in Bot. Reg. ad calc.* n. 1300.

Calyx ovato-tubulosus, margine membranaceus, irregulariter 5-dentatus, fructifer suberectus, rariùs declinatus, dentibus patulis vel inferioribus inflexis, basi sæpius transversè rugosus. Corolla tubo calycem vix æquante, bilabiata, labio superiore quadrifido, inferiore integerrimo, subplano. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice bifidus, lobis sæpius dilatato-complanatis, stigmatibus submarginalibus.—Herbæ perennes vel annuæ. Verticillastri multiflori, laxè spicati, spicis subsimplicibus. Folia floralia basi sæpius cartilaginea, alba vel flavescentia.—Genus quod corollæ formam *Ocymo* vel *Moschosmæ* affine, sed calyce, stylo et habitu diversum.

1. *G. strobiliferum* (Wall. MSS.); caule erecto, ramoso; foliis sessilibus, oblongis, utrinque attenuatis, dentatis, suprâ hispidulis, subtus glabriusculis; verticillastri multifloris, ad apicem ramorum spicatis, infimis subremotis; foliis floralibus ovatis, acuminatis, flores superantibus; calycibus fructiferis erectis, strictis, tubulosis, basi transversè rugosis, ore membranaceo, erecto-patente, irregulariter 5-dentato.—*Plectranthes colorata*, Don. Prod. Nep. p. 116.

Caulis basi fruticosus, ramis elongatis, erectis. Folia caulina 2—3-pollicaria, basi in petiolum brevissimum attenuata, superiora et floralia minora, basi sæpius alba. Racemi spiciformes, 3—4-pollicares. Calyx sæpius subbilabiatus, fructifer lineas 3 longus, labii superioris dente medio ovato, obtuso, lateralibus minutis, labio inferiore brevior, bidentato. Corolla vix calyce longior; labium superius latè 4-fidum; inferius sub-brevius, angustè lanceolatum. Stamina corollâ subbreviora.

Hab. Napalia, Sillet.

2. *G. parviflorum*; caule erecto, ramoso; foliis oblongo-lanceolatis, acutis, utrinque attenuatis, serratis, strigoso-hispidulis; verticillastri multifloris, laxè racemosi; calycibus pedicellatis, fructiferis declinatis, basi transversè rugosis, ore bilabiato, labio superiore tridentato, dente medio majore, inferiore integerrimo, inflexo, calycem claudente.

Caulis herbaceus, pedalis sesquipedalisve, infernè glaber, supernè pilis raris, adpressis hispidulus, ad axillas foliorum fasciculo pilorum munitus. Folia in petiolum brevem attenuata, acuminata, irregulariter et acutè dentata, basi cuneatè integerrima, suprâ et ad nervos strigoso-hispidula; floralia acuminata, floribus subbreviora, suprâ glaberrima, albida, subtus hispidula. Racemi 3—6-pollicares. Verticillastri laxi, subremoti, 15—20-flori. Pedicelli calyce longiores, erecti, graciles, glabri. Calyces fructiferi vix 2 lineas longi, basi hispiduli, labiis membranaceis, glabris. Corolla parva. Stamina exserta.

Hab. Sillet.

3. *G. prostratum*; caule basi prostrato, ramisque adscendentibus hispidis; foliis petiolatis, oblongo-lanceolatis, inferioribus subovatis, supremis lanceolato-linearibus, serratis, basi attenuatis; verticillastri multifloris, spicatis, inferioribus subremotis; calycibus pedicellatis,

fructiferis declinatis, basi striatis, transversè subrugosis, ore membranaceo, irregulariter bilabiato, labio superiore tridentato, dente medio majore, inferiore erecto, bidentato.—*Ocymum prostratum*, Linn. Mant. p. 566. *O. menthoides*, Willd. Sp. 3. p. 116., an Linn. Mant. p. 84? *Lumnitzera prostrata*, Spr. Syst. 2. p. 687.

Caulis prostratus, ramosissimus, hispidus, angulis subcallosis, glaberrimis. Folia parva, semipollicem ad pollicem longa, 3—4 lineas lata, acutè et remotè serrata. Racemi pollices 2—4 longi, spiciformes. Verticillastri 10—20-flori, inferiores remotiusculi, supremi approximati. Folia floralia minuta, ovata, acuta, sessilia, basi albida, submembranacea. Pedicelli calyce longiores, graciles, erecti vel subincurvi. Calyces parvi, fructiferi vix sesquilineam longi, basi striati, hispiduli, supernè contracti, ore dilatato, membranaceo. Corolla minuta, calyce vix duplò longior, tubo brevissimo, incluso. Stamina breviter exserta.

Hab. Madras.

4. *G. axillare*; caule ramoso, glabro; foliis breviter petiolatis, ovatis, obtusis, crenatis, basi cuneatis, glabris, floralibus conformibus; verticillastri remotis, 6—10-floris, calycibus breviter pedicellatis, elongatis, tubulosis, basi angulatis, hispidis, supernè contractis, ore membranaceo, dilatato, labio superiore 3-dentato, inferiore 2-dentato.

Caulis videtur erectus vel adscendens. Folia pollicem vel sesquipollicem longa, lineas 6—8 lata, nervosa. Pedicelli calyce subbreviores. Calyx fructifer lineas 3—3½ longus. Corolla calycem vix excedens.—Specimina in herbario imperfecta.

Hab. Napalia.

XLIII. ACROCEPHALUS, *Benth. l. c.*

Calyx ovatus, bilabiatus, labio superiore integro, inferiore integro vel 4-dentato, fructifer tubulosus, basi gibbus. Corolla calycem subæquans, bilabiata, labio superiore quadrifido, inferiore integro, subplano. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice breviter bifidus, lobo inferiore subdilatato, complanato, stigmatibus marginalibus.—Herbæ annuæ, floribus dense globoso-capitatis.

1. *A. capitatus* (Benth. l. c.); caule basi procumbente, ramosissimo, ramis adscendentibus, glabris, vel utrinque lineâ pilosâ notatis; foliis oblongis, ovatis, remotè serratis, basi integerrimis, glabris; capitulis ovato-globosis; foliis floralibus duobus subcapitulo ovatis, subsessilibus isto longioribus, cæteris in capitulo minutissimis; calycis labio inferiore quadridentato.—*Ocymum capitatum*, Roth. Nov. Pl. Sp. p. 276. *O. capitellatum*, Linn. Mant. 276? *Lumnitzera capitata*, Spr. Syst. 2. p. 687.

Hab. Napalia; Monghir, Gualpara; Travancore, Courtallum; Taong Dong.

XLIV. ANISOCHILUS, Wall. MSS. *Benth. l. c.*

Calyx ovatus, obliquus vel bilabiatus, labio superiore subintegro, post anthesin deflexo, calycem claudente, inferiore integro, truncato vel brevissimè 4-dentato. Corolla tubo exserto, refracto, fauce subinflata, bilabiata, labio superiore 3—4-fido, inferiore integro, concavo. Stamina 4, declinata. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice subulatus, æqualiter bifidus, stigmatibus minutis.—Herbæ, floribus dense imbricato-spicatis, foliis floralibus bracteiformibus.

1. *A. carnosum* (Wall. MSS.); caule erecto, ramoso; foliis petiolatis, ovato-rotundatis, obtusis, crenatis, basi cordatis, crassis, carnosissimis, utrinque tomentoso-villosis; spicis longè pedunculatis; foliis floralibus ovatis, obtusis; calycis labio superiore ovato, acuto, membranaceo, margine ciliato, super labium inferius truncatum deflexo.—*Lavandula carnosus*, Linn. *Plectranthus dubius*, Spr. Syst. 2. p. 691. *P. strobiliferus*, Roxb. Hort. Beng. p. 45.

Caulis bipedalis, tetragonus, villosus, supernè subnudus. Spicæ longè pedunculatæ, vix paniculatæ, fructiferæ 1—2 pollices longæ, semipollicem crassæ, regulariter cylindricæ. Calyx fructifer basi subinflatus, ad os contractus, tenuiter rufo-tomentosus. Corolla calyce duplò longior, labio inferiore elongato, concavo, stamina excedente.

β. *purpurascens*; spicis glabriusculis, purpurascens.

Hab. α. in montibus Circarensibus. β. Taong Dong.

2. *A. pallidum* (Wall. MSS.); caule erecto, ramoso; foliis petio-

latis, oblongo-ellipticis, crenatis, utrinque attenuatis, membranaceis, vel vix carnosus, glabriusculus; spicis paniculatis; foliis floralibus lanceolato-acuminatis; calycis labio inferiore oblique truncato, brevissimè 4-dentato, superiore lanceolato, acuto, post anthesin deflexo.

Statura *A. carnosus*. Folia pollices 3—6 longa, 1—3 lata, acuminata, grossè crenata, suprâ vix hispidula, subtus ferè glabra. Spicæ pedunculatæ, laxè paniculatæ, tenuiores quàm in *A. carnosus*. Calyces fructiferi ferrugineo-tomentosi, basi subinflati, supernè incurvi, ore obliquo, labio superiore parvo, acuto. Corolla ferè *A. carnosus* sed tenuior.

Hab. Taong Dong.

3. *A. polystachyum*; caule erecto, ramoso; foliis subsessilibus, ovato-oblongis, acuminatis, serratis, basi cuneatis, tenuissimè pubescentibus, subtus nervosis, spicis paniculatis, calycibus supernè incurvis, ore obliquo, 5-dentato, dente supremo vix longiore.

Habitus *A. pallidi*. Caulis obtusè tetragonus, brevissimè tomentosus. Folia 2—4-pollicaria, suprâ tenuissimè pubescentia, subtus nervosa, minutè glandulosa, rufescentia, rigidiuscula. Spicæ 2—3-pollicares, semipollicem crassæ. Calyx rufo-tomentosus, basi inflatus, supernè contractus, elongatus, incurvus, ore oblique fesso, dentibus 5, brevibus, acutis, supremis incumbentibus. Corollam non vidi, sed ob habitum et calycis formam plantam huc retuli.

Hab. Napalia.

4. *A. dysophylloides*; caule sericeo, villosus, basi procumbente, ramis adscendentibus; foliis subsessilibus, oblongo-lanceolatis, obtusis, integerrimis, basi attenuatis, spicis axillaribus terminalibusque, subpedunculatis; foliis floralibus ovatis, acutis; calycis labio inferiore minuto, truncato, superiore acuto, deflexo.

Habitus ferè *Dysophylli rugosi*. Ex omni parte pilis mollibus, rufescentibus, sericeis dense vestitum. Folia pollicem vel sesquipollicem longa, lineas 4—6 lata. Spicæ floriferæ regularitè cylindricæ, fructiferæ irregularitè tumidæ, pollices 1—2 longæ, crassitie calami scriptorii. Calyces fructiferi basi inflato-tumidi, supernè incurvi, ore contracto, labio superiore brevi, acuto, concavo, incumbente. Corolla brevior quàm in *A. carnosus* et *pallido*, lobis latioribus. Stamina exserta.

Hab. . . . Herb. Wight.

XLV. CHÆTOSTACHYS, Benth. MSS.

Calyx ovato-tubulosus, erectus, subincurvus, 15-nervius, subæqualitè 5-dentatus, intus fauce nudâ. Corolla tubo exserto, bilabiata, labiis brevissimis, superiore emarginato, inferiore trifido. Stamina 4, declinata, tubo inclusa. Filamenta libera, edentula. Antheræ ovato-reniformes, loculis confluentibus. Stylus apice subinfundibuliformi-bifidus, lobis brevibus, complanatis, concavis, stigmatibus marginalibus. Achenia compressa, margine callosa.

1. *C. multifida*.—*Bysteropogon bipinnatus*, Roth. Nov. Pl. Sp. p. 255. *Mentha pinnatifida*, Heyne MSS. *Lavandula multifida*, Burm. Fl. Ind. p. 126? non ejusd. ic. t. 38. f. 1. nec Linn.

Caulis herbaceus (?), erectus, tetragonus, ad nodos contractus, tenuitè tomentoso-pubescent. Folia sessilia, bipinnatifida, laciniis elongato-linearibus, obtusis, integerrimis, margine revolutis, subtus

tomentoso-pubescentibus. Flores in spicam terminalem, ramosam dispositi, solitarii ex axillis bractearum alternarum!, membrana-cearum, basi dilatatarum, longissimè setaceo-acuminatarum. Calyx sessilis, 15-striatus, canescens, dentibus acutis, fructifer turgidus. Corolla tenuis, calycem excedens. Limbus videtur subæqualitè 5-fidus, sed in speciminibus vix ritè examinare potui. Stamina *Lavandulæ*. Ovarium basi infrâ ut in plerisque *Ocymoides* glanduliferum. Achenia aquâ immersa extus, ut in *Hyptidibus* plurimis, gelatinosa.

This plant, so remarkable by the alternate inflorescence, is closely allied to the *Lavandulæ** of the section of *Pterostachys* of de Gingins. This character however, together with the 15-nerved calyx, the nearly regular corolla, and the form of the fruit, are differences which appear to me to be sufficient to warrant its separation as a distinct genus.

ADDENDA ET CORRIGENDA.

Teucriis addatur:

T. Wallichianum; caulibus e basi radicante subsimplicibus, adscendentibus, rufo-tomentosis; foliis ovatis, acutis, serratis, in petiolum longè attenuatis, utrinque hispidulis; verticillastris multifloris, in spicam terminalem approximatis; calycibus hispidis, ore subdilatato, dentibus ovatis, acutis, subæqualibus.

Affine *T. Arduini*, sed characteribus datis distinctissimum.

Hab. Sillet.

Perilla elata, Don. Prod. Nep. p. 115, is my *Aphanochilus blandus*.

Perilla polystachya, Don. l. c., which I had (*suprà*, Vol. I. p. 39.) referred with doubt to *Aphanochilus blandus*, appears from Dr. Hamilton's specimens to be my *Pogostemon glabrum*, unless there be some error in the labels.

Perilla leptostachya, Don. l. c. is my *Aphanochilus factens*.

Mentha quadrifolia, Don. l. c. p. 113. (non Roxb.) is my *Dysophylla cruciata*.

Thymus nepetoides, Don. l. c. is the *Nepeta ruderalis* Hamilt.

Thymus piperitus, Don. l. c. p. 112, as well as his *T. origanifolius*, belong to my *Clinopodium longicaule*.

Scutellaria repens, Don. l. c. p. 110. is my var. β . of the *Sc. cana*, Wall.

My *Scutellaria angulosa* (*suprà*, Vol. I. p. 67.) must be referred to the *Sc. scandens*, Don. l. c. p. 110.

The other synonyms of Don's Prodrum which are given with doubt in the course of the preceding Synopsis are all correctly quoted.

The *Teucrium laxum*, Don. l. c. p. 108. is a distinct species not contained in Dr. Wallich's collections.

The *Salvia ocymoides* Roxb. (*suprà*, Vol. I. p. 68. must be referred to *Salvia acaulis* Rottl. (Vahl. Enum. I. p. 257.).

* *Lavandula* should, on account of its declinate stamina, be referred to *Ocymoides*, not to *Nepetæ*, where I had placed it. My character (*Bot. Reg. l. c.*) requires also some further modification.

END OF Mr. Benthams SYNOPSIS OF INDIAN Labiata.

ROSA MACROPHYLLA. Tab. 117.

ACULEIS sparsis, compressis; foliis longissimis, petiolis parcè glandulosis foliolisque lanceolatis subtus lanatis; sepalis angustissimis, petalis apiculatis longioribus.—Lindl. *Rosar. Monogr. p. 35. t. 6.* (charact. ab auctore emendat.)

Rosa macrophylla, Lindl. loc. cit.

β . *minor* foliolis parvis, oblongis, utrinque acutis (nunc apice obtusis) basi integris, floribus solitariis.—Lindl. in *Herb. Coet. Ampl. Mercat. Angl. Ind. Orient. 690.*

γ. arguta, foliis oblongis, acuminatis, cuspidato-serratis; petiolo glanduloso et aculeato; floribus corymbosis.
Lindl. loc. cit.

Habitat in Himalaya Nepalensi, Kamaonensi et Gurwalica. *β.* in Sirmore Dom. W. S. Webb. *γ.* ad Gossain Than.
 Floret mensibus Julii et Augusti.

FRUTEX magnus, ramosus. CAULIS erectus, cylindricus, pollicem ad duos crassus, *ramique* subscandentes coloris castanei, nitidi, armati *aculeis* sparsis, compressis, acutissimis, vix curvis; *ramuli* glaucescentes, subinermes. FOLIA subdistantia, erecto-patentia, oblonga, 6—10-pollicaria, 3—11-juga; *pinnæ* lanceolatae, acuminatae, argutè serratae, basi acutæ, planæ, suprà nitidæ, glabræ, atrovirides, nunc purpureo-nebulatæ, subtùs præcipuè ad costam cano-villosæ, sublanuginosæ, ferè sessiles, inferiores pollicares ad 1½-pollicares, exteriores multò majores: terminalis 3-pollicaris, longiusculè petiolata. PETIOLUS *communis* pollicaris vel bipollicaris, tener; *rachis* gracilis, glanduloso-villosa, cana, ætate glabrior, rarè aculeolata. STIPULÆ magnæ, membranaceo-foliaceæ, pollicares, lanceolatae, tenuissimè acuminatae, longè adnatæ, concaviusculæ, patentes, integerrimæ, rufescentes, densè glanduloso-ciliatæ, ætate nudæ. FLORES aliquot terminales, magni, rubri, inodori, nunc unus alterve solitarius in axillis supremis, *pedunculis* insidentes teretibus, villosulis, parcè glanduloso-setosis, bipollicaribus. BRACTEÆ magnæ, stipulis simillimæ, ad basin pedunculi sæpiùs geminatae et suboppositæ, rufescentes, glanduloso-ciliatæ, glabriusculæ. CALYCIS tubus oblongus, levitè ventricosus, parcè setosus, vel omninò glaber; *laciniæ* perquam longæ, divaricato-patentissimæ, persistentes, lanuginosæ, e basi lato-lanceolata rostrato-attenuatæ, apice foliaceo, lineari-lanceolato, serrato vel integro, nunc minuto. PETALA subrotundato-obovata, retusa cum cuspidula, pollicaria, patentissima, laciniis calycinis breviora. STAMINA inserta disco carnosio, flavescenti, convexo. STYLI numerosi, barbati. BACCA ovalis, pollicaris, ruberrima, setosa, coronata staminibus limboque calycis persistentibus, intùs densè hispida; *semina* magna, ossea, apice barbata.

The preceding description is almost entirely taken from Professor Lindley's admirable Monograph on Roses. The shrub is very large, and would be a great acquisition in this country, where it would beyond a doubt thrive well. Mr. Lindley informs me that his variety *γ. arguta* is possibly a distinct species, and the most European form among the Roses of India, approaching to some varieties of *Rosa mollis*.

Plate CXVII. Fig. 1. Ripe fruit. 2. A piece of the stem.

LYSIONOTUS TERNIFOLIA. Tab. 118.

Lysionotus serrata, Don. Prodr. Nepal. 124.

Chirita ternifolia, Hamilt. apud Don. loc. cit.

Habitat super truncis arborum saxisque in montibus Nepalæ, florens et fructifera mensibus Augusti—Decembris.
 In Kamaon, *R. Blinkworth*.

PLANTA carnosae, erectae, pallidè viridis, pedalis, bipedalis, glabra. RADIX subrepens, valdè crassa et carnosae, albicans, laevis, nitida, fibrillosa, supernè parùm divisa. CAULES aliquot erecti, simplices, cylindrici, purpureo-punctulati, pennam anserinam crassi. FOLIA verticillato-ternata, rarè opposita, subapproximata, patentia, lanceolato-oblonga, attenuato-acuminata, serrata, basi acuta, brevè petiolata, 5—7-pollicaria, carnosae, utrinque glabra, suprà nitida, subtùs nervosa, nervis obliquis, gracilibus. PETIOLI unguiculares, suprà sulcati. CORYMBI longè pedunculati, axillares, alternantes, oppositi vel verticillati, foliorum longitudine, glabri, bis tervè trichotomi vel dichotomi. FLORES magni, pedicellati, ternati vel geminati, dilutè cœrulei. PEDUNCULUS *communis* gracillimus, nudus, 3—4-pollicaris; *partiales* pollicares, suffulti *bracteis* oppositis, lanceolatis, semiunguicularibus; *pedicelli* unguiculares. CALYX 5-partitus, persistens; *laciniæ* oblongo-lanceolatae, acutæ. COROLLA infundibuliformis, 1½-pollicaris, calycem tervè superans, venosa, pubescens; *tubus* supernè ampliatus; *limbus* patens, bilabiatus; labium superius 2-lobum, inferius 3-lobum, majus: *lobi* subæquales, ovati, obtusi; *faux* ampla, pervia, infernè lineis duabus, elevatis, flavis. STAMINA 4; inferiorum *fertilium filamenta* carnosae, complanata, subclavata, parallela, infra apicem subcornutum, obtusum, glanduloso-papillosum antherifera; *antheræ* in fauce, biloculares, transversè ovatae, levitè coherentes. STAMINA *sterilia* 2, superiora, subulata, brevia, nuda. OVARIUM cylindricum, laeve, unguiculare, basi attenuatà et subpedicellatà circumdatum disco annulari, brevissimo, flavido. STYLUS columnaris, brevis. STIGMA orbiculatum, subtruncatum, vix retusum. CAPSULA lineari-tetragona, digitum ad spithamam longa, laevis, pallidè ferruginea; structurà et dehiscentià omninò *Æschynanthi ramosissimæ* (Vol. 1. p. 55.). SEMINA copiosissima, minuta, subulata, laevia, fusca, utrinque acuta et terminata pilo longo, simplicissimo, hyalino.

I sent specimens of this beautiful plant to the Museum at the India House in 1824, under the name of *Calosacme polycarpa*. I have now referred the plant to the genus *Lysionotus*, and in justice to Dr. Hamilton I have adopted his specific name, quoted but rejected by the author of the *Prodromus Floræ Nepalensis*.

Plate CXVIII. Fig. 1. Calyx opened. 2. Corolla opened. 3. Fertile stamens. 4. Capsule. 5. The same, divided in the middle. 6. A valve detached. 7. Seed.

TURRÆA PINNATA. Tab. 119.

FOLIIS pinnatis; tubo staminum 10-dentato, dentibus bifidis.

Habitat in montibus Sillet confinibus. In Horto Calcuttensi floret mensibus Februarii et Julii.

FRUTEX (arbor?). RAMI cylindrici, cortice glabro, pallidè fuscescente. FOLIA petiolata, valdè approximata, sparsa, undique patentia, impari-pinnata, 2—3-juga; foliola opposita, patentia, brevissimè petiolata, lanceolata, attenuato-acuta, integerrima, elegantè undulata, basi parùm cordata et inæqualia, lobis rotundatis, altero brevior, rigida, subcarnosa, haud punctata, utrinque secus tractus vasorum pilosula, suprâ atroviridia, lucida, subtùs costâ nervisque alternis elevatis, levitèr venulosa; inferiora pollicaria, exteriora sensim majora, impar ferè 3-pollicare. PETIOLUS communis teres, pilosulus, basi parùm dilatatus, suprâ sulcatus, sesquipollicaris, desinens in rachin rectam, teretem, sulcatam; partiales brevissimi, teretes, pilosuli. STIPULÆ nullæ. PEDUNCULI solitarii, axillares, teretes, pilosi, pollicares, post expansionem florum decurvi, apice gerentes flores aliquot fasciculatos, pedicellatos, pallidè roseos, inodoros, suffultos pedicellis brevibus, clavatis, sulcatis. BRACTEOLÆ paucæ, sparsæ, lanceolatae, acutæ. CALYX profundè 5-partitus, pilosus; laciniae foliaceæ, ligulatae, inæquales, basi conniventes, apice acutiusculâ patulæ. COROLLA tubulosa, sesquipollicaris, limbo patente. PETALA 5, plana, lanceolata, subinæqualia, obtusiuscula, patentia, subtùs subsericea, basi angustatâ desinentia in unguis longos, connatos in tubum cylindricum, gracilem, sulcatum, limbum æquantem, calyce duplò longiorem, basi intùs auctum tubulo carnosum, brevissimo, truncato, ovarium et basin styli ambiente. FILAMENTA 10, glabra, unita in tubum carnosum, cylindricum, unguibus corollæ adnatum, supernè liberum, erectum, limbo brevior, fauce parùm dilatatum, 10-dentatum, dentibus brevibus, subulatis, versus apicem seorsum dorso appendiculatis denticulo subulato, brevi, patente. ANTHERÆ 10, inter dentes stamineos sessiles, hisce breviores, erectæ, oblongæ, 2-loculares, pilosulæ. OVARIUM parvum, ovatum, tubulo appendiculari corollæ inclusum, 5-loculare? 5-spermum? ovulis erectis? STYLUS filiformis, longitudine filamentorum. STIGMA capitatum, carnosum, intra antheras latens. FRUCTUS haud visus.

My acquaintance with this shrub is limited to some living individuals in the Honourable Company's Botanic Garden at Calcutta, which were sent from the mountains near Sillet by Francis De Silva in 1825, and which blossomed soon afterwards in February and July. I have never received any dried specimens of the plant, nor have I seen the fruit; I am unable therefore to determine the genus with certainty. It seems to be nearly allied to *Trichilia*. The leaves are neither dotted nor have they any aromatic smell; the pinnæ have sometimes a small additional leaflet or appendix attached to or between their bases.

Plate CXIX. Fig. 1. 2. Flower. 3. Calyx and pistil. 4. Corolla opened. 5. Tube of the stamens. 6. The same, opened.

LEYCESTERIA FORMOSA. Tab. 120.

Leycesteria formosa, Wall. in Roxb. Flora Indica, 2. p. 181. Decand. Prodr. Syst. Nat. 4. p. 338.

Having given a full description of this plant in the second volume of Roxburgh's *Flora Indica*, I deem it unnecessary to swell this work by copying it here. It is an exceedingly elegant shrub, growing wild on the highest mountains of Nipal, both near the great valley, and in a more northerly direction; also on those of Kamoon and Sirmore. It blossoms during the rainy season, from April to October, and the fruit ripens in October and November.

Plate CXX. Fig. 1. 2. Flower. 3. Ovary and calyx. 4. Corolla opened. 5. Stamens. 6. Berry. 7. 8. The same, opened. 9. Seed.

UVARIA GRANDIFLORA. Tab. 121.

SCANDENS; foliis elliptico-oblongis, acuminatis, deorsum contractis, basi retusis, subsessilibus, subtùs tomentosis; pedunculis oppositifoliis et supra-axillaribus, unifloris, medio instructis bractea magnâ, ovatâ, ventricosâ; petalis villosis, subæqualibus, lato-ovatis; baccis pluribus, cylindricis, longè pedicellatis, villosis, obliquè acutis.

Uvaria grandiflora, Roxb. Hort. Beng. p. 43.—*Unona grandiflora*, Decand. Prodr. Syst. Nat. 1. p. 91.

Habitat in Sumatra. In Horto Calcuttensi floret per totum ferè annum. Baccæ maturescunt mense Aprilis.

FRUTEX magnus, ramosus. RAMI valdè longi, subscandentes, teretes, cortice induti fusco, calloso-punctato; juniores cum foliis novellis densè ferrugineo-tomentosi. FOLIA alterna, subapproximata, bifariè patentia, demùm subdeflexa, brevissimè petiolata, elliptico-oblonga, brevè acuminata, deorsum angustata, basi contractâ retusa, 5—10-pollicaria, plana, suprâ lævia, nitida, inter nervos rugosula, subtùs pilis copiosis, stellatis, pallidè ferrugineis tomentosa, costâ nervisque suboppositis, parallelis, obliquis, prominentibus, venosa. PETIOLI

crassi, cylindrici, semipollicares, tomentosi. FLORES magni et speciosi, pedunculati, atropurpurei, ferè inodori, solitarii, oppositifolii vel supra-axillares, patentissimi, subnutantes. PEDUNCULUS cylindricus, crassiusculus, tomentosus, petiolo triplò longior, basi articulatus, medio instructus bractea magnâ, foliaceâ, pallidè viridi, semipollicari, obovatâ, obtusâ, ventricosâ, laxiusculâ, caducâ, aliâque versus basin pedunculi minore, oblongâ. CALYX patenti-subrecurvus, tomentosus, 3-partitus; *laciniæ* lato-ovatae, acutiusculæ, concavæ. COROLLA plano-patentissima, demùm subreflexa, diametrum plùs quàm bipollicarem emetiens, calyce triplò major; *petala* 6, serie duplici, alternante disposita, obovata, rotundato-obtusa, basi parùm contracta, pollicaria, interiora tria paulò minora, coriacea, crassa, atropurpurea, suprâ nervis parallelis, gracilibus, interque hos guttis transversis, ferè atris subtessellatim ornata, subtùs saturatiùs colorata, utrinque pube brevi, mollissimâ, canâ obsita. STAMINA et PISTILLA densissimè aggregata in glomerulum centralem, imbricatum, hemisphaericum, compactum, medio glutinosum, dehiscentiâ antherarum demùm muricatum. ANTHERÆ oblongæ, subsessiles, dorso carnosæ, utrinque longitudinaliter dehiscentes, apice terminatæ ligulâ ovatâ, obtusiusculâ; *pollen* pallidè flavum. OVARIA centrum glomeruli occupantia, numerosa, gracilia, ferè filiformia, villosa, unilocularia, polyspora. STIGMATA mollia et carnosâ, mucosa, subarticulatim apici ovarii imposita, conduplicata, obtusa. BACCÆ numerosæ, longè stipitatæ, quarum major pars sæpiùs abortiva et citò dilabescens, oblongo-cylindricæ, digitum minimum ferè crassæ, longitudine inæquales, pollicem 1 usquè ad 4 longæ, levitèr torulosæ, obliquè acutiusculæ, carnosæ, flavæ, tomentosæ, dorso costis duabus, prominentibus, distantibus, parallelis notatæ, transversè multiloculares, ope pedicelli gracilis, carnosus, subangulosus, sesquipollicaris insertæ apici pedunculi communis, elongati et tumefacti convexo, hemisphaerico, lignoso, foveolato. SEMINA plurima, unico lateri adfixa, ovalia, compressa, fusca, lævia, nitida, *dissepimentis* baccæ separata tenuibus, carnosis. INTEGUMENTUM chartaceum. PERISPERMUM valdè rimosum.

This shrub when in flower is one of the greatest ornaments which the Calcutta Garden possesses; the flowers being very large, of a dark purple colour, tessellated with black square spots, and opening in succession nearly all the year round. It approaches closely to *Uvaria purpurea* of Dr. Blume, figured and described in the *Flora Javæ* of that most eminent botanist; a work which for splendour of execution and for scrupulous accuracy of detail is second to none that has ever appeared on botanical subjects.

Plate CXXI. Fig. 1. Flower dissected. 2. Stamens and pistils. 3. A bunch of fruit. 4. A detached bunch of fruit, opened lengthwise.

UVARIA MACROPHYLLA. Tab. 122.

FRUTEX altissimè scandens; foliis oblongo-ellipticis, acuminatis, brevè petiolatis, basi cordatis, subtùs ferrugineò tomentosis; floribus fasciculatis, axillaribus, pedunculatis; petalis ovatis, acutis, subæqualibus; baccis pluribus ovali-oblongis, brevè pedicellatis, obtusis, lævibus.

Uvaria macrophylla, Roxb. Hort. Beng. p. 91.

Unona macrophylla, Roxb. MSS.

Habitat in Sillet et Chittagong Bengalæ. In Horto Calcuttensi floret tempore anni humido; fructus maturescunt mense Decembri.

FRUTEX magnus, altissimè super arbores scandens. RAMI longissimi, scandentes vel laxè penduli, cylindrici, glabri, cortice fusco induti; *juniores* flexuosi, tomentosi. FOLIA bifariè patentia, alterna, brevè petiolata, oblonga vel oblongo-elliptica, brevè acuminata, basi subcordato-retusa, coriacea, 6-pollicaria ad pedalia, quin ultrâ, suprâ transversim rugosa, nitida, glabriuscula, subtùs tomento brevi, stellato, ferrugineo oblecta, costâ validâ, nervis numerosis, parallelis, elevatis, apice arcuato-anastomosantibus, alternis brevissimis; *juniora* utrinque ferrugineo-tomentosa. PETIOLI crassi, semicylindrici, tomentosi, semipollicares. FLORES pedunculati, axillares, fasciculato-subcorymbosi, patentes, subnutantes, ex fusco lateritii, inodori. PEDUNCULUS communis pollicaris, crassus, ferrugineò tomentosus, a vestigiis bractearum demùm annulatus; *partiales* 3—5, subclavati, valdè approximati, bifarii, nunc subumbellati, $\frac{1}{2}$ -pollicares, mediò articulati et bracteati, 1-flori, rarè 2-flori. BRACTEÆ sparse, lato-ovatae, concavæ, acutæ, coriaceæ, caducæ. CALYX patentissimus, ferrugineus, persistens, suffultus bractea latâ; *laciniæ* triangulari-acutæ, suprâ concaviusculæ. COROLLA plano-patentissima, diametro sesquipollicaris, calyce plùs duplò major; *petala* 6, ovalia, acuta, basi parùm angustata, utrinque densè villosa, subtùs ferruginea, *interiora* vix minora. STAMINA et PISTILLA ut in præcedente specie, sed minora. BACCÆ plurimæ, ovato-oblongæ, glaberrimæ, carnosæ, flavæ, digitum medium crassæ, pollicem vel duos longæ, utrinque obtusæ, haud torulosæ, pedicello brevissimo insertæ apici pedunculi communis capitato-dilatato, foveolato. SEMINA plura, semiovata, compressa, fusca, nitida, margine exteriore convexo, interiore angusto, *dissepimentis* separata dimidiatis, tenuibus. ALBUMEN minutè ruminatum. EMBRYO valdè parvus.

This is a very large, extensively rambling or climbing shrub. When growing near a tree it ascends by means of stout horizontal branchlets, which extend parallel and close to each other, alternately embracing the trunk once or twice, and thus aiding to lift up the larger branches. The flowers are very elegant, but much smaller than those of the preceding species. The leaves are large and handsome; when rubbed they emit a not unpleasant, slightly aromatic smell, which is generally present also in the other members of the tribe to which this shrub belongs. The pulp of the berry is more aromatic than that of the fruit of *Uvaria grandiflora*.

Plate CXXII. Fig. 1. Fascicle of flower seen from behind. 2. Flower dissected. 3. Part of the tuft of stamens and pistils. 4. Pistil. 5. Contour of a large leaf.

RHODODENDRUM ARBOREUM ALBUM. Tab. 123.

VARIETAS, foliis subtus ferrugineo-tomentosis; floribus albis.

Crescit in monte Sheopore Napaliæ, ad summum ejus cacumen, florens mense Aprilis.

The stately *Rhododendrum arboreum* of the mountains of India has been fully described and beautifully figured by the late Sir J. E. Smith. I shall therefore on this occasion advert only to two varieties of it with which I am acquainted: namely, the *White-flowered*, which is figured in the accompanying plate, and the *Rose-flowered*, which was published in the Botanical Register, vol. 15. p. 1240. Both are confined to the single mountain Sheopore, among those which I had an opportunity of visiting during my sojourn in Nipal, occupying the very summit of it, at an elevation of not less than 10,000 feet above the sea. I observed a considerable number of individuals, but it appeared to me that those with rose-coloured flowers were by far the most common. They attain the size of very large forest-trees, and are noble objects at all times. They blossom simultaneously in April, in which state the beauty of them surpasses all description, the ample crown of the trees being entirely covered with bunches of large and elegant blossoms. The common red-flowered or parent species is likewise found on the above-mentioned mountain, but it is less frequent there than in lower situations, where it blossoms a month earlier, that is in March.

There cannot be the slightest doubt that the above-mentioned trees are mere varieties of the common *Rhododendrum arboreum*; and if it were necessary to adduce proofs of this, in addition to the fact that in every essential character they perfectly agree, I should mention that I have actually seen the white- and rose-coloured sorts gradually change into each other, as well as into the colour of the parent tree. The only marks of distinction from the latter, consist in the more or less brown colour of the lower surface of the leaves, which both varieties have in common, and the colour of the flowers, which in our variety is pure white, with a very slight tinge of pale pink on the base of two or three of the lobes of the corolla. I am convinced, moreover, that from the great elevation at which the varieties are found, they will prove hardy trees in this country; and that even the common Nipal *Rhododendrum*, provided the individuals are derived from mountains not lower than that at which its varieties grow, will also stand the climate of England.

Plate CXXIII. Fig. 1. 2. Flower. 3. The same, opened.

INGA UMBROSA. Tab. 124.

SPINIS stipularibus, rectis; foliis conjugato-pinnatis, pinnis 3-foliolatis; foliolis oblongis, obtusis, basi obliquâ acutis, impari parvo; petiolis anopteris, apice glandulâ planâ, parvâ; capitulis pedunculatis, axillaribus, solitariis, glabris.

Incolit montes Sillet confines, florens Octobri. In Horto Botanico Calcuttæ floruit primâ vice sub pluviis 1827.

ARBOR vasta, ramosa, comâ patente. RAMULI cinerei, teretes, *aculeis* axillaribus, oppositis vel alternis, brevibus, rectis, subulatis, fuscescentibus, tuberculo insidentibus, ætate oblitteratis; uti omnes reliquæ partes glaberrimi. FOLIA approximata, pollices 10 circiter longa, conjugato-pinnata, semi-bijuga, i. e. 3-foliolata. FOLIOLA oblonga vel elliptico-oblonga, obtusa, basi valdè obliquâ, subdimidiatâ acuta, ferè sessilia, coriacea, lævia, suprâ lucida, subtus nervosa, venosa reticulataque; *par terminale* 6—8-pollicare ad pedale; *foliolum impar* s. tertium extrorsum versus basin rachis vel petioli partialis situm, reliquis tèt minus. PETIOLI nudi, suprâ plano-sulcati; *communis* 2—4-pollicaris; *partiales* subdivaricati, illo sæpius paullò breviores, cuspidè brevissimâ terminati. GLANDULA parva, plana ad apices petiolorum communis et partialium. CAPITULA axillaria, solitaria, *pedunculo* tereti, gracili, sesquipollicari insidentia, cum staminibus diametrum biunciale emetientia. FLORES circiter 20, albi, odorati, subsessiles, læves. CALYX brevissimus, membranaceus, 5-denticulatus. COROLLA tubulosa, limbo 4-fido, patulo, laciniis ovatis, acutis. STAMINA plurima, longissima, monadelphæ. ANTHERÆ parvæ. OVARIUM ovatum, brevè stipitatum. STYLUS staminibus dimidiò brevior. LEGUMEN haud visum.

Plate CXXIV. Fig. 1. 2. Flower. 3. Calyx, opened. 4. Corolla, opened. 5. Stamens and pistil.

ORMOSIA GLAUCA. Tab. 125.

FOLIOLIS lanceolatis, utrinque acutis, lævibus, glaucis; racemis axillaribus, solitariis, erectis; calycibus ferrugineo-villosis.

Crescit in convalle Napaliæ magnâ, passim; florens Majo.

ARBOR mediocris. RAMI cylindrici, glabri; *juniores* conspersi pube ferrugineâ, separabili pilisque aliquot atris, brevibus. FOLIA ad apices ramorum approximata, sparsa, patentia, pinnata cum impari, 4-juga, semipedalia. PINNÆ lanceolatae, utrinque acutae, integerrimae, exactè oppositae, brevè petiolatae, coriaceae, 2—3-pollicares, suprâ nitidae, subtus pallidae et glaucescentes, interiores sensim breviores, reticulato-venulosae, costâ vix puberulâ. PETIOLUS communis pollicaris vel bipollicaris, teres, basi levitèr incrassatus et articulatus; *partiales* cylindrici, 3 lineas longi, basi articulati; *rachis* gracilis, teres, recta. STIPULÆ, si ullae, minutae et caducae. FLORES mediocris magnitudinis, albi, dispositi in *racemos* oblongos, erectiusculos, axillares, solitarios, pedunculatos, folio parùm breviores. PEDUNCULUS communis 2—3-pollicaris rachisque levitèr compressi, pubescentes. CALYX ovatus, basi ventricosus-ampliatus, obsoletè 5-angularis, subbilabiatus, 5-fidus, *pedicellus*que villositate ferrugineâ densè vestiti; labium superius 2-fidum, inferius 3-fidum; *lacinae* patulae, ovatae, acutae, subaequales. COROLLA calyce duplò major, glabra; *petala* breve-unguiculata; *vexillum* superius, subrotundum, retusum, adscendens, unguiculare, planum, mediò parùm sulcatum, disco pallidè viridescens; *alae* oblongae, obtusae, basi retusae, vexillo parumper breviores; *carina* 2-phylla; *foliola* omninò distincta, alis similia. STAMINA 10, distincta, parallela, glabra, longitudine inaequalia; *filamenta* filiformia, basi subincrassatâ distantia (præcipuè supremum seu decimum), alterna graciliora; inferiora carinâ parùm longiora, exserta, superiora breviora; *antherae* ovatae, erectae, exsertae. PISTILLUM stamina longiora vix æquans; *ovarium* sessile, oblongum, complanatum, adpressè villosum, canum, 4-sporum; *stylus* teres, subadscendens; *stigma* parvum, bilobum, lobis obtusis.

Plate CXXV. Fig. 1. Flower. 2. The same, opened. 3. Stamens. 4. Pistil. 5. The same, opened.

PARIS POLYPHYLLA. Tab. 126.

Paris polyphylla, Smith in Cyclopædia Reesiana, in loco.

Habitat in sylvis densis Napaliæ, Kamaon et Sirmore, florens a mense Aprilis usque ad finem Junii, fructifera versus finem pluviarum, mense Septembris.

Nomen Newar, *Beema*.

HERBA erecta, omnibus partibus lævis, bipedalis usque ad quadripedalem, lætè viridis, attritu odorem spargens narcoticum. RADIX perennis, tuberosa, carnosâ, cylindrica, horizontalis, levitèr annulata, fusca, pollicem ad sesquipollicem crassa, digitum circitèr longa, *fibras* deorsum emittens longas, cylindricas, numerosas, ramulosas. CAULIS solitarius, strictus, teres, 2—4-pedalis, exsulcus, pallidus, e basi squamata, pennam cygneam crassa sensim attenuatus, supernè gracilis. SQUAMÆ paucae, breves, vaginantes, alternæ, membranaceae, oblongae, acutae, citò emarcescentes. FOLIA 7 ad 10, infra apicem caulis 3—6-pollicarem disposita in verticillum valdè regularem, patentissimum, diametrum usque pedalem emetientem, oblonga, vel cuneato-oblonga, integerrima, gracillimè acuminata, basi acuta levitèrque attenuata, 4—6-uncialia, membranacea et tenuia, suprâ nitidula, subtus pallida, 5-nervia, nervis exterioribus tenerimis, interioribus 3 basi contiguis: omnibus venarum transversarum ope remotiusculè anastomosantibus. PETIOLI pollicares vel infrâ, cylindrici, parùm sulcati, purpurascens, basi paullò dilatâtâ caulem amplexantes. FLOS terminalis, solitarius, maximus, patentissimus, diametrum 8-pollicarem sæpè attingens, apice caulis nudo, gracili, pollices 3—6 super verticillum foliorum producto pedunculatus, inodorus, viridis, involucreatus. INVOLUCRUM perianthium proximè suffultiens, foliaceum, 5—7-phyllum, aliquandò 4-phyllum, rarissimè 3-phyllum, patentissimum; *foliola* figurâ et structurâ folia ipsa plantæ omninò referentia, iisdem autem duplò triplovè minora, deorsum angustata, basi latâ sessilia, admodum pallidè viridia. PERIANTHIUM petaloideum, 5—7-phyllum, nunc numero involucri correspondens cumque foliolis ejusdem alternans, nunc numero ab eodem differens et insertionem relativâ mirum in modum varians; *foliola* angustissimè linearia, planiuscula, vix lineam dimidiam lata, basi vix dilatâtâ circum ovarium inserta, indè adscendentia, majore parte exteriore laxè nutantia, acuta, e lutescenti viridia, 3—4-pollicaria, involucri breviora. STAMINA 5—14, erecta, brevina, ad ambitum basis ovarii inserta, foliolis perianthii aut duplò numerosiora, aut numero planè variantia irregularitèrque inserta; *filamenta* subulata, parùm complanata, unguicularia; *antherae* lineares, biloculares, utrinque longitudinalitèr dehiscentes, filamentis parùm longiores, *connectivo* lineari, apice breviter producto, nudo; *pollen* majusculum, globosum, flavum. PISTILLUM staminibus parùm brevius; *ovarium* magnum, globoso-ovatum, obsoletè et inæqualitèr 5-sulcatum et 5-angulare, vertice plagulâ parvâ, submarginatè 5-gonâ notatum, 1-loculare, polyspermum; *ovula* seriebus sæpiùs 5, sulcis ovarii exterioribus correspondentibus, parieti subcarnoso inserta; *stylus* brevissimus, crassus, sæpè per axin ovarii deorsum continuatus; *stigmata* 4 vel 5 carnosâ, subulata, subrecurvata, obtusa, suprâ papilloso-scabrida, subtus sulcata. BACCA exsucca, coriacea, globosa, obsoletè 5-carinata, pallidè ferruginea vel flavescens, magnitudine cerasi, suffulta et coronata partibus floris emarcidis, 1-locularis, polysperma, plenâ maturitate in valvulas 3, 4 vel 5 valdè irregularitèr disrupta. PLACENTÆ 4 vel 5 parietales, membranaceae, denticulatæ, adfidentes semina valdè copiosa, parva, ovalia, variè angulata, basi acutiuscula, subfasciculata, coccinea, cavitatem fructus prorsus replentia. INTEGUMENTUM coriaceum, crassiusculum, *albumini* carnosâ, aqueo-pallido arcuè adhærens. EMBRYO exiguus, globularis, fuscescens, ad basin seminis extra perispermum situs.

This very remarkable plant has been described by the late Sir James Edward Smith in Rees's Cyclopædia, under the article "*Paris*," from specimens received from the late Dr. Hamilton, which he gathered in Nipal in the year 1801, where it grows very commonly, delighting, like its Northern relative, in shady and moist woods. Several years before I visited that country, my people, who were stationed there under the direction of my zealous friend the Honourable Edward Gardner, supplied me with specimens in all stages, of which I forwarded a vast number to the late Sir Joseph Banks and Sir J. E. Smith, to Mr. Lambert, and many other botanists. A short account of the structure of the seed-vessel was transmitted by me from Nipal to Dr. Hamilton, who inserted it in the Edinburgh Philoso-

phical Journal, vol. 1. p. 379. The natives of the country consider the whole plant as poisonous, especially the seeds and root. All the green parts possess a disagreeable narcotic smell, which is perceptible on their being rubbed, and is very like that of a *Datura*. The number and relative position of the leaves and the parts of the flower vary in an extraordinary manner, of which I know of no parallel instance. Mr. Royle has communicated to me a scale of these variations, founded on his own observations, which I subjoin. He adds, that the fleshy root has a faint nauseous smell and taste; the stem and berries, when bruised, a narcotic one; and that they probably possess the medicinal properties ascribed to *Paris quadrifolia* in a still greater degree. My excellent friend found the plant on the mountain called Mussuree, at an elevation of about 6000 feet, and in a mean temperature of 59° Fahrenheit, flowering in April. *Paris incompleta* of Marschal a Bieberstein is probably quite a distinct species.

Variation in the number of parts observed in different individuals by Mr. Royle:—

Leaves.	Involucres.	Perianths.	Stamens.	Stigmas.
9	4	4	8	4
9	5	4	12	5
9	7	7	14	7
9	6	6	12	6
8	4	4	9	4
8	3	3	8	3
7	4	4	8	4
7	4	4	7	4

Plate CXXVI. Fig. 1. Flower, the involucre being removed. 2. Pistil. 3. The same, divided horizontally. 4. The same, divided vertically. 5. Fruit, having the withered parts of the flower attached. 6. The same, burst open. 7. 8. The same, divided horizontally and vertically. 9. A fascicle of seeds attached to part of the placenta. 10. A separate seed. 11. The same, opened, showing the situation of the embryo.

STERCULIA COMOSA. Tab. 127.

FOLIIS maximis, ovato-cordatis, longè petiolatis, acuminatis, extrorsum levitèr trilobis, 9-nerviis, subtus glaucis, pubescentibus; cymis nutantibus, axillaribus, paniculatis; perianthii campanulati lobis oblongis, liberis.

Crescit in sylvis Amboynæ. In Hortum Calcuttensem a Dom. Mackenzie introducta, ubi floret mense Martii.

ARBOR procera, valdè ramosa et comosa. TRUNCUS robustus. RAMULI crassi, cylindrici foliaque glaberrima, epidermide cinereâ. FOLIA amplissima, ad apicem ramulorum approximata, patentissima, ovato-cordata, acuminata, extrorsum levitèr triloba, lobis obtusis vel acutis, parùm sinuata, sinu basis acuto et satis profundo, coriacea, suprâ nitida, subtus glaucescentia, puberula, 7—9-nervia, nervis crassis, ramosis, transversè et parallèlè venosa, palmaria, pedalia, quin sesquipedalia. PETIOLUS cylindricus, glaber, basi parùm intumescens, apice ad divisuram in nervos plano-dilatatus, 5—12-pollicaris. PANICULA terminalis, maxima, foliosa, constans cymis axillaribus, nutantibus, laxis, oblongis, ramosis, foliis parùm brevioribus. PEDUNCULI teretes, carnosì, stellato-pubescentes. FLORES parvi, purpurascens, pedicellati, odorati. PERIANTHIUM campanulatum, 5-fidum, intus villosulum; lobi oblongi, patuli, acutiusculi, liberi. STAMINA 10, brevissima, basin ovarii ambientia. OVARIUM globosum, glabrum, vertice obsolete 5-sulcatum, pedicellatum. STYLUS brevis, carnosus, incurvus. STIGMATA 5, teretia.

This is a truly noble and stately tree, abounding with very large and dense foliage, and producing in the beginning of the hot weather enormously large drooping panicles of small, purple, sweetly-scented flowers.

Plate CXXVII. Fig. 1. Flower. 2. 3. The same, opened. 4. Stamens and pistil.

DELPHINIUM ALTISSIMUM. Tab. 128.

RADICE subtuberosâ, perenni; caule elongato, gracili, supernè subramoso; foliis longè petiolatis, palmatim 5-lobis, subtus argenteis, pilosulis, lobis apice inciso-trifidis, grossè dentatis, caulinis remotissimis, subsessilibus, lineari-3-partitis; petalis calyce dimidiò brevioribus, pilosis, inferioribus bilobis; calcare recto, adscendente, pedicellum æquante, interiore 2-phyllo; capsulis 3, cylindræis, pilosulis.

Crescit in sylvis montanis Napaliæ, florens fructiferumque sub pluviis.

RADIX perennis, crassa, subtuberosa, fibras frequentes exserens. CAULIS erectus, gracilis, 3—5-pedalis, teres, pube adpressâ conspersus, ætate glaberrimus, basi simplicissimus, pennam cygneam crassus, supernè attenuatus, nunc ramos paucos, remotos, breves emittens. FOLIA pauca et remota; *radicalia* et inferiora caulis longè petiolata, orbiculato-cordata, palmatim quinqueloba palmaria vel infrà, suprà glaberrima, nitida, juxta vasorum tractus sulcata, subtùs argenteo-pallida, 5-nervia, grossè reticulato-venosa, nervis venisque pilis brevibus munitis; *lobi* basi cuneati, integerrimi, extrorsum inæqualitèr subtrifidi, inciso-dentati, dentes magni, ovati, cuspidati; *caulina* pauca, valdè distantia, brevissimè petiolata, tripartito-digitata, 2—3-pollicaria, lobis linearibus, elongatis, acutis, pubescentibus, ciliatis. PETIOLI foliorum inferiorum graciles, pedales sesquipedalesve, erecti, puberuli, suprà plano-sulcati, basi dilatà amplexantes, caulesque sæpè purpurascens. RACEMUS terminalis, caulis ramorumque erectus, cylindricus, simplex, rarò divisus, digitum ad spithamam longus, nudus. FLORES magni, remotiusculi, extùs densè pubescentes, suffulti *pedicellis* pollicaribus, basi 1-bracteatis, mediò suboppositè 2-bracteatis, bracteis linearibus, pedunculoque communi cano-pubescentibus. SEPALA cœrulea, ovata, acutiuscula, apice concaviuscula, interiora paullò latiora, unguicularia, superius desinens in *calcar* rectum, purpurascens, adscendens, cylindraceo-attenuatum, obscurè quadrangulare, pubescens, pedicellum longitudine subæquans. PETALA distincta, purpurea, sepalis dimidiò breviora; *inferiora* oblonga, profundè biloba, fornicata, levitèr deflexa, cano-pilosula, unguiculata; *superiora* obliquè oblonga, subtruncata, posticè bifida, deorsum producta in *ungues* graciles, virides, *calcar* interius formantes, exteriore occultos. STAMINA plura, glabra, decurva, dehiscentiâ antherarum demùm erecta. CAPSULÆ 3, pilosulæ, venosæ, cylindraceæ, intùs carinatae, obliquè acuminatæ, divergentes.

Plate CXXVIII. Fig. 1 and 2. Flower dissected.

THALICTRUM CYSTICARPUM. Tab. 129.

FLORIBUS hermaphroditis, racemoso-paniculatis, filamentis capillaceis; carpellis longè stipitatis, vesicularibus, compresso-obovatis, retusis, cuspidatis, reticulatis; foliis lævibus, exstipellatis, tèt trichotomis, foliolis ovato-subcordatis, acutis, serratis.

Crescit in montibus Napaliæ altioribus, versusque Emodum ad Gossain Than. Floret fructificatque tempore anni pluvioso.

RADIX constans fibris plurimis, ramosis. CAULIS erectus, cylindricus, fistulosus, uti tota planta lævis et glaucescens, nunc asper propter aculeolos minutos, subulatos, 3—5-pedalis, infernè pennam cygneam ad digitum minimum ferè crassus, supernè valdè attenuatus, divisus in *ramos* patentes, gracillimos, obsoletè flexuosos. FOLIA magna, remota, patentia, trichotoma, decomposita, inferiora longè, superiora floraliaque brevè petiolata. FOLIOLA ternata, ovata, subcordata, acuta, pollicaria ad 1½-pollicaria, inæqualitèr grossè et acutè serrata, intermedium majus, obsoletè trilobum; membranacea et tenuia, suprà pallidè viridia, opaca, subtùs valdè glauca, 5-nervia, reticulato-venosa, sinu basis plùs minùsve manifesto, nunc nullo. PETIOLI graciles, levitèr sulcati, tèt trichotomi, siccitate ad divisuras articulati; *universalis* semipedalis pedalisve, basi valdè dilatà, membranaceo-marginatà *gemmales* sæpissimè foveante plurimas, subulatas, in acervulum axillarem, densè confertas; *partiales* graciles, nudi; *ultimi* tenerrimi, folioli intermedii pollicaris vel sesquipollicaris. FLORES hermaphroditi, albi, odorati, dispositi in *racemos* graciles, oblongos, axillares, pedunculatos, foliis breviores vel superiores iisdem longiores, *paniculam* efformantes magnam, terminalem, foliosam, pyramidato-patentissimam. PEDUNCULI graciles, teretes, subflexuosi; *pedicelli* capillares, pollicares, subfasciculati, *bractes* lineari, longiusculà suffulti. SEPALA 4, petaloidea, obovato-subrotunda, concaviuscula, lævia, ferè unguicularia. STAMINA plura, gracilia, sepalis tertiò breviora; *filamenta* capillacea; *antheræ* angustissimæ, cuspidulatæ. OVARIA numerosa, compressa, obliquè acuta, pedicellata. STYLI uncinato-recurvati, scabri, ovarii ferè longitudine. CARPELLA umbellata, longè capillaceo-stipitata, vesicularia, unguicularia, obovata, compressa, subretusa, stylo emarcido obliquè cuspidata, lævia, ferruginea, reticulato-venulosa; plura sæpiùs abortiva. SEMEN cylindraceo-subulatum, cavitate carpelli pluriès minus, e fornice ejus dependens.

Besides this handsome and large-flowered species of *Thalictrum*, I am acquainted with five others, also natives of Hindustan.

T. cultratum, floribus unisexualibus? axillaribus, longè pedunculatis; carpellis vesicularibus, cultriformibus, deorsum valdè attenuatis, subsessilibus, stylo longissimo, uncinato terminatis, reticulato-rugosis; foliis triternatis, exstipellatis, foliolis cuneato-ovatis, inciso-3-dentatis, lævibus.

A native of Gossain Than and Kamaon.

T. reniforme, floribus hermaphroditis, subpaniculatis, filamentis antherisque filiformibus; carpellis . . . ; foliis triternatis, exstipellatis, foliolis reniformi-cordatis, obtusissimè inciso-dentatis, utrinque caule ramisque pube canâ, mollissimâ obsitis.

A native of Gossain Than. It belongs probably to the same section with the preceding two species, namely, *Physocarpum* of DeCandolle.

T. foliolosum, DeCand. Syst. Nat. 1. p. 175.

A native of all the forests of Nipal and Kamaon.

T. punduanum, floribus hermaphroditis, paniculatis; carpellis sessilibus, subulatis, sulcatis, scabris; foliis biter-natis, exstipellatis, petiolo basi utrinque in ligulam oblongam dilatato, foliolis subrotundo-cordatis, basi obliquis, nunc cuneatis, subtrilobis, dentatis, subtùs nervoso-venosis, reticulatis.

A native of the mountains called Pundua, in the neighbourhood of Sillet. Like all the other species it blossoms and produces fruit during the advanced part of the rainy season.

T. rotundifolium, DeCand. loc. cit. p. 185.

Plate CXXIX. Fig. 1. A branch of the panicle. 2. 3. Flowers. 4. The same, dissected. 5. Pistil. 6. A raceme of young fruit. 7. Carpellum. 8. 9. The same, opened. 10. Seed.

ACACIA MODESTA. Tab. 130.

ARBOREA; ramis flexuosis, spinis axillaribus subulatis; foliis bipinnatis, 2—3-jugis, pinnulis oblongis, obtusis, glabris, glaucis, subcinerascentibus; petiolo pilosulo, mediò uniglanduloso; spicis axillaribus terminalibusque, subso-litariis, cylindricis, nutantibus, brevè pedunculatis; floribus hermaphroditis, filamentis corollâ duplò longioribus, distinctis; legumine stipitato, lineari-oblongo, plano, glabro, submembranaceo, 6-spermo, utrinque acuto.

Habitat in Hindustania. Florentem observavi ad Saharunpur Aprili 1825. In Horto Calcuttensi floret mensibus Maii et Junii; legumina maturescunt Novembre.

ARBUSCULA 8—12-pedalis, ramosissima. RAMI divaricato-patentes, aculeati; *ramuli* graciles, flexuosi, teretes, pallidi, calloso-punctulati, glaberrimi; tenelli uti petioli pedunculique pilis conspersi raris, patulis, brevibus. ACULEI geminati, stipulares, et ad divisuras ramorum, breves, recti, subulati, fusci, nitidi. FOLIA approximata, patentia, nunc subfasciculata, bipinnata, 2—3-juga, brevè petiolata, 3-pollicaria, lævia. PINNÆ exactè oppositæ, oblongæ, subsessiles, 2—3-jugæ, 2-pollicares. PINNULÆ oblongæ, obtusæ vel subretusæ, ferè sessiles, basi rotundatæ, vix inæquales, oppositæ, subdistantes, unguiculares, obsoletè venulosæ, utrinque valdè pallidæ et glaucæ, exteriores parùm majores, subobovatae. PETIOLI graciles, ferè filiformes, glauci, suprâ sulcati; *communis* mediò inter basin et primum pinnarum par munitus glandulâ parvulâ, concavâ, depressâ. STIPULÆ capillacæ, breves, valdè caducæ. SPIRÆ axillares terminalesque, solitariae vel geminatae, laxè nutantes, oblongo-cylindricæ, obtusæ, 3-pollicares, digitum minimum vix crassæ, initio albæ, deinde flavicantes, suffultæ *pedunculo* tereti, gracili, pollicari vel sesquipollicari. FLORES parvi, glabri, fragrantés, sessiles, undique circum *rachin* lineatam, filiformem sparsi, approximati, patentissimi, hermaphroditi. CALYX ovatus, obtusè 5-dentatus, basi subgibbosus. COROLLA calyce duplò major, infundibuliformis, 5-fida; *laciniæ* erectæ, ovatae, acutæ. STAMINA valdè numerosa, corollâ duplò longiora, divergenti-patentia; *filamenta* omninò distincta, capillacea, alba; *antheræ* minutæ, didymæ, subglobosæ. OVARIUM lineare, læve, substipitatum; *stylus* filiformis, longitudine staminum, glaber; *stigma* minutum, simplex. LEGUMEN lineari-oblongum, compressum, submembranaceum, utrinque acutum, glabrum, margine utroque recto vel levitè repando, parùm incrassato, 6-spermum, stipite suffultum tereti, semiunciali. SEMINA orbicularia, plana, ope funiculi longiusculi, serpentine inserta, lævia, fusca, ocellata.

This is an elegant shrub or small tree, remarkable on account of the pallid, cinereous colour of its foliage, and its drooping spikes of fragrant flowers. It is very ornamental while in blossom.

Plate CXXX. Fig. 1. Flower. 2. Calyx and corolla. 3. The same, opened. 4. Calyx and pistil.

ALNUS NAPALENSIS. Tab. 131.

Alnus nepalensis, Don Prodr. Floræ Nepal. p. 58.

Crescit in montibus vallem Napaliæ magnam ambientibus; florens et fructifera fine et initio anni.

ARBOR 30—40-pedalis. RAMI fusci, calloso-punctulati; *juniores* pube pallidè ferrugineâ conspersi. FOLIA alterna, patentia, ovalia, acuta, nunc levitè acuminata, integerrima vel minutim crenulata, 4—7-pollicaria, coriacea, suprâ lævia, lucida, subtus glaucescentia, punctis minutis, resinosis, impressis notata, multinervosa, nervis suboppositis, approximatis, parallelis, obliquis, ad axillas villosulis, usque ad ambitum excurrentibus, ibique arcuato-anastomosantibus costâque elevatis, pubescentibus, venis transversis, numerosis. PETIOLUS cylindricus, suprâ sulcatus, ½-pollicaris—pollicaris, glaber. STIPULÆ lanceolatae, acutæ, caducæ. AMENTA *mascula* terminalia, paniculata, longissima, cylindrica, gracillima, ferè filiformia, 6—8-pollicaria, flaccida, suffulta *pedunculis* brevibus, puberulis, simpliciter ramosis. SQUAMÆ valdè approximatae. ANTHERÆ magnæ. AMENTA *feminea* in eadem arbore infra mascula, terminalia ramulorum, subsessilia, racemosa, oblongo-cylindrica, obtusa, glabra, ferè uncialia; *squamæ* obcordatæ, cuspidatæ. SEMINA pallidè fusca, sursum membranaceo-marginulata.

Plate CXXXI. Fig. 1. Part of a male amentum. 2. 3. Scales, with stamens. 4. Female amentum. 5. 6. Scales.

ACER CAUDATUM. Tab. 132.

Acer caudatum, suprâ, p. 4.

ARBOR vasta. RAMULI teretes, læves, ferruginei. FOLIA patentia, orbiculato- vel ovato-cordata, palmaria, 5—7-loba, lobis ovatis, exterioribus brevioribus, gracillimè acuminatis, duplicato-serratis, serraturis longè cuspidatis; suprâ glabra, nitentia, subtùs 5—7-nervia, reticulato-venosa, secus vasa ferrugineo-pilosa, ætate salvis axillis nervorum glabra. PETIOLI graciles, teretes, rubicundi, longitudine reticulato-venosa, secus vasa ferrugineo-pilosa, ætate salvis axillis nervorum glabra. PETIOLI graciles, teretes, rubicundi, longitudine reticulato-venosa, secus vasa ferrugineo-pilosa, ætate salvis axillis nervorum glabra. FLORES masculi e gemmis maximis, ovatis, villosis, versus apices ramulorum corymbosi, glabri, pedunculis filiformibus, longiusculis, glabris, laxis suffulti. CALYX 5-partitus, venosus, albidus; laciniae ovatae, obtusae. PETALA 5, cuneata, unguiculata. STAMINA 8, erecta intra discum magnum, carnosum, cum rudimento centrali pistilli. SAMARÆ longiusculè pedunculatae, læves, sesquipollicares, rubicundae, demùm ferrugineae, loculo rugoso, alis levitè divergentibus, cultriformibus, obtusis, dorso rectilineis, introrsum crenulatis; dispositae in racemum ramulorum terminalem, erectum.

I have already remarked (in page 4 of this Volume) that this noble tree varies somewhat in its foliage and fruit, according to the locality of its growth. I am sure, however, that these differences do not amount to any specific distinctions. The figure which is here given represents a branch of the Gossain Than tree, with young fruit.

ZANONIA SARCOPHYLLA. Tab. 133.

FOLIIS 3-foliolatis, foliolis crassis, carnosis, ovatis, obtusis, integerrimis.

Habitat ad loca sterilia et in rupibus calcareis ad Prome, Paghamew, Yenangheun, Segain, alibique secus ripam fluminis Irawaddi, florens mense Septembris, fructifera Novembri.

FRUTEX ramosissimus, laxè super arbusculas rupesque scandens, omninò lævis. RAMI longissimi, flaccidi, graciles, teretes, subsulcati, pallidi. FOLIA subdistantia, patentia, brevè petiolata, 3-foliolata, suprema aliquandò simplicia; foliola subrotundo-ovalia, nunc ovata, obtusa, nunc levissimè retusa, cuspidulâ brevi terminata, basi acuta, brevè petiolulata, integerrima, succulenta et carnosâ, fragilia, lineam crassa, plana, mediò longitudinalitèr sulcata, 3—4-pollicaria, glauca et valdè pallida, subtùs obscurè venulosa, obsoletissimè 3-nervia, costâ levitèr elevatâ, lateralia parùm minora, basi vix obliqua. PETIOLI carnosi, crassi, suprâ sulcati, æquales, vix semiunciales. CIRRI simplices, extra-axillares, 2—6-pollicares, filiformes, attenuati. FLORES masculi parvi, inodori, ex albo viridescens, pedicellati, patentissimi, æstivatione pyramidato-conici et imbricantes, solitarii vel subfasciculati, dispositi in racemulos paniculatos, valdè ramosos, pyramidatos, laxos, axillares terminalesque, palmares ad pedales, foliis duplò triplòve longiores. PEDUNCULI graciles, filiformes, carnosi, puberuli, sulcati, nitidi; pedicelli capillacei, semiunguiculares, suffulti bracteolâ lineari, carnosâ. CALYX usque ad basin divisus in lacinias 5, lineari-lanceolatas, acuminatas, planas, patentissimas, disco carnosas, marginibus membranaceas, basi subtùs gibbosulas, vix 2 lineas longas. PETALA 5, rarò 4, omninò distincta, patentissima, ovata, cuspidato-acuta, ferè membranacea, lacinii calycinis parùm longiora, cumque hisce alternantia, obsoletè ciliata. STAMINA 5, e centro floris erecta, parallela, glabra, petalis breviora; filamenta subulata; antherae nutantes, dorso carnosae, hinc 2-loculares. FLORES feminei in distincta planta, in racemos paniculatos, oblongos omninò uti flores masculi digesti, sed longiùs pedicellati. CALYX et COROLLA ut in masculo. OVARIVM inferum, clavato-cylindricum, læve, viridescens, unguiculare, 1-loculare, polyspermum; ovula distantia, pendula, utrinque alternatim inserta placentis 3, rarò 4, parietalibus, carnosis. STYLI 3 vel 4, breves, conici, carnosi, intùs planiusculi. STIGMATA carnosâ, papilloso-scabrida, semilunaria, nutantia. FRUCTUS clavatus, obtusè triangularis, pendulus, sesquipollicaris, fauce subtruncatâ, 3-angulari. SEMINA haud visa.

This curious plant delights in arid and sterile exposed situations along the banks of the river Irawaddi. It is very branchy, and spreads in all directions, over shrubs and rocks, climbing by means of its simple and slender tendrils. The branches are long and pendulous; the leaves very fleshy and juicy, and of a pale glaucous colour. The flowers are small, but very numerous, forming ample greenish, nodding panicles; the different sexes are produced in distinct plants.

I am acquainted with the following other species of *Zanonia* :—

Z. clavigera, lævis; foliis trifoliolatis, foliolis oblongis, acuminatis, integerrimis; fructu maximo clavato.

A native of Sillet, where it is called in the Bengali language *Kishnobera*. The fruit is three inches long, and as thick as a thumb; the seeds flat, oblong, terminated at both ends with an obtuse spongy wing, two inches long. The mode of fructification in this as well as in *Z. cissoides* and *laxa*, is like that of *Z. sarcophylla*.

Z. angulata, lævis; caule anguloso; foliis simplicibus, subhastato-lanceolatis, basi cordatis; fructu maximo, clavato.

This is also a native of Sillet. I have only seen a single mutilated specimen. The fruit is as long as a finger, and very thick.

Z. cissoides, caule filiformi, angulato; foliis pedatis, 5- vel 7-foliolatis, foliolis lanceolatis, utrinque acuminatis, grossè cuspidato-serratis; petiolis pedunculisque pilosulis.

I found this in Nipal, in flower during the rainy season, in 1821. I have not seen the fruit.

Z. lava, caule filiformi, ramosissimo, bifariè pilosulo; foliis 3-foliolatis, foliolis acuminatis, serratis, intermedio lanceolato, lateralibus subsemicordatis, petiolis pedunculisque pilosulis.

A native of Sillet, where it blossoms in the rainy season. I have not seen the fruit.

Z. heterosperma, glabra; caule filiformi, tenuissimo; foliis pedato-5-foliolatis, foliolis lanceolatis, acuminatis, serratis; capsulâ clavato-angulatâ, suffultâ pedunculo capillaceo, longissimo; seminibus squamoso-scabris, fasciâ angustissimâ cinctis.

I found this on the mountain called Taong Dong, near Ava, in fruit in November 1826.

Capsula chartacea, 3-gona, lineas 8 longa, ostio 3-dentato; semina pauca, vix ultra 3, parva, ovata, plana, utrinque squamulis minutis, elegantè imbricantibus rugosa, fasciâ lævi, angustâ marginata, cæterum aptera; albumen nullum; embryo erectus, cotyledonibus latis.

Plate CXXXIII. Fig. 1. 2. Male flower. 3. The same, dissected. 4. A detached stamen. 5. A panicle of female flowers. 6. 7. Female flowers, detached;—these and the following much enlarged. 8. Ovary and styles. 10—13. Ovary, dissected.

VIBURNUM ERUBESCENS. Tab. 134.

Viburnum erubescens, DeCand. Prodr. Syst. Nat. 4. p. 329.

Crescit in sylvis montanis Napaliæ superioris et Kamaon, florens fructusque proferens mensibus Aprilis—Junii.

FRUTEX, vel arbuscula, 12-pedalis vel infra, erectus, ramosus. RAMI cylindrici, pallidi, ferè albicantes, glabri; ramuli breves, oppositi, patentissimi; tenelli pubescentes. FOLIA opposita, patentia, lanceolata, nunc elliptica, acuminata, acutè serrulata, basi acutâ integerima, suprâ lucida, obliquè sulcata, subtus nervis obliquis, parallelis, costâque prominentibus, in novellis marginibusque pubescentibus; ætate glaberrima, 2—3-pollicaria. PETIOLI breves, rubicundi, carnosii, suprâ sulcati. CORYMBI terminales, solitarii, pedunculati, erecti, ovati, obtusi, 2-pollicares, foliis parùm breviores. PEDUNCULI rubicundi, carnosii, teretes; pedicelli oppositi, divaricati, suffulti bractearum pari lineari, pubescenti. FLORES terni vel oppositi, tubulosi, glabri, ex albo erubescens, odore mellito gratissimi, brevissimè pedicellati. CALYX valdè parvus, 5-fidus; laciniae ovatae, obtusulae. COROLLÆ tubus cylindrico-subclavatus, unguicularis; limbus patens, tubo dimidiò brevior, divisus in lacinias 5, ovato-subrotundas; faux nuda, pervia. STAMINA 5, semiexserta; filamenta perquàm brevina, fauci intus, infra fissuras limbi inserta; antherae longiusculæ, lineares, subversatiles, biloculares. OVARIUM inferum, læve, cylindricum, basi angustatâ instructum bracteolis 2, subulatis, brevissimis; 1-loculare: ovulum solitarium, suspensum fornici loculi angustissimi, elongati. STYLUS columnaris, vix tertiam tubi corollæ partem æquans. STIGMA infundibuliforme, carnosum. BACCA oblongo-cylindrica, semipollicaris, stylo persistente coronata, rubra, carnosâ, glabra, 1-sperma. SEMEN oblongum, compressum, hinc sulco latiusculo, marginato concavum, indè parùm convexum.

This elegant shrub is rather common on the mountains of Nipal. The flowers are sweet-scented like honey; the leaves when rubbed emit a very peculiar, almost sulphureous smell.

Since the time when I communicated specimens of the family of *Caprifoliaceæ* to my illustrious friend Professor DeCandolle, who has done me the honour to undertake the description of the species in the collections under my charge, I have become acquainted with another species of *Viburnum*, in the very rich herbarium of Dr. Wight, to whom I have now the pleasure of inscribing it. It is nearly allied to the species described above, and like that it belongs to M. DeCandolle's section called *Solenotinus*. Most probably it is a native of some of the mountains of the Peninsula of India. It may be characterized in the following manner:—

V. Wightianum, foliis lanceolato-ovatis, extrorsum acutè serratis, basi integerrimis, subtus petiolisque stellato-puberulis, axillis nervorum lanuginosis; corymbo terminali, brevè pedunculo, bracteis linearibus, elongatis, pedicellos subæquantibus, corollis infundibuliformibus.

Plate CXXXIV. Fig. 1. 2. Flower. 3. Calyx and pistil. 4. Corolla, opened. 5. Ovary, opened. 6. A cluster of berries. 7. Berry, divided horizontally. 8. Seed. 9. The same, divided transversely.

ARUM ERUBESCENS. Tab. 135.

FOLIO peltato, multifoliolato, foliolis oblongo-linearibus, acuminatis, undulatis, sessilibus; petiolo, scapo vaginisque purpureo-lineatis; spathæ rubro-striatæ, cylindricæ limbo ovato, fornicato, in acumen filiforme, æquans desinente; spadice cylindrico, obtuso, lævi.

Habitat in montibus altissimis Napaliæ, florens sub pluviis.

PLANTA lævis, erecta, surgens e radice tuberosa, bipollicari, fibras multas, cylindricas exserente. FOLIUM radicale, unicum, erectum, limbo plano, patentissimo, orbiculato-peltato, ferè pedali, 10—12-foliolato. PETIOLUS crassiusculus, cylindricus, $1\frac{1}{2}$ -pedalis, vaginatus, flavidus, lineis longitudinalibus, majusculis, transversè seriatis, purpureis annulatis pictus. FOLIOLA oblongo-linearæ, valdè acuminata, undulata, deorsum attenuata, basi angustà sessilia, 6-pollicaria, atroviridia, subtùs glaucescentia. VAGINÆ 2 vel 3, cylindricæ, attenuato-acutæ, ore obliquæ et laxiusculæ, una cum scapo purpureo-lineatæ; interior 8-pollicaris. SCAPUS solitarius, cylindricus, petiolo brevior, cum illo basi vaginis communibus involutus. SPATHA pallida, striis albis et roseis utrinque ornata; basis 3-pollicaris, cylindraceo-convoluta; limbus paullò brevior, ovatus, fornicatus, apice descendente, attenuatà in acumen teres, porrectum, pollicare. SPADIX dioicus. MASCULUS haud visus. FEMINEUS erectus, tubum spathæ æquans; inferior pars vix pollicaris, densè oblecta ovariiis obovatis, 4-ovulatis, stylo conico, brevissimo terminatis; clava ferè 2-pollicaris, cylindrica, obtusa, basi parùm dilatata, lævis.

Plate CXXXV. Fig. 1. Spathæ, opened. 2. Female spadix. 3. Detached ovary. 4. 5. The same, opened.

ARUM ECHINATUM. Tab. 136.

FOLIO peltato, 8-foliolato, foliolis oblongo-lanceolatis, acuminatis, deorsum attenuatis, sessilibus; vaginis purpureo-lineatis; scapo brevi; spathæ albo-striatæ, cylindricæ, convolutæ, limbo ovato, fornicato, intùs purpureo, desinente in acumen filiforme, prælongum; spadice clavâ cylindricâ, apice obtusissimo echinato-pilosâ.

Crescit ad apicem Sheopore montis, florens Junio.

TUBER subglobosum, glabrum, 2-pollicare. RADICULÆ longæ, filiformes, pallidæ, carnosæ. FOLIUM unicum, radicale, basi vaginatum, longè petiolatum, peltatim 7- vel 8-foliolatum, uti tota planta læve. PETIOLUS cylindricus, pallidè viridis, glaucescens, pennam cygneam crassus, supernè attenuatus, $1\frac{1}{2}$ —2-pedalis. FOLIOLA stellatim patentissima, oblongo-lanceolata, attenuato-acuminata, basi attenuata et subacuta, nunc crispatula, sessilia, plana, vix undulata, suprâ atroviridia, subtùs glauca, nervis gracilibus, transversalibus, intra marginem anastomosantibus, ad lucem lineolis minutis, diaphanis notata, 4—5-pollicaria. VAGINÆ 2 vel 3, membranaceæ, laxiusculæ, obtusæ, ore obliquæ; exterior brevissima, intima 6-pollicaris, basin petioli utraque dimidium scapi involvens. SCAPUS solitarius, gracilis, apice sub-clavatus, petiolo teritiò brevior. SPATHÆ basis oblonga, convoluta, 4-pollicaris, glaucescens, lineis albis striata, intùs purpureo-guttulata; limbus ovatus, fornicatus, 4-pollicaris, basi albo- et viridi-striatus, supernè intùs purpureus, marginibus subrecurvatis, apice acutâ desinens in filum gracillimum, teres, obliquè descendens, limbum ipsum longitudine æquans. SPADIX dioicus, erectus, 2-pollicaris. MASCULI inferior dimidia pars cylindrico-attenuata, filamentis obsita brevibus, sparsis, distantibus, subulatis, terminatis antheris quaternis vel quinis, violaceis; exterior dimidia pars, sive clava, crassa, cylindrica, alba, punctis minutis, seriatis, violaceis, parallelè multilineata, apice obtusissimo, vix ultra faucem spathæ exserto obsita pilis densis, brevibus, patentibus, hyalinis. FEMINEI inferior pars densè oblecta ovariiis ovatis, angulatis, 2-sporis, stylo brevi terminatis; clava exactè ut in masculo.

Plate CXXXVI. Fig. 1. Spathæ, opened. 2. Female spadix. 3. Ovary, detached. 4. 5. The same, opened. 6. Male spadix. 7. 8. Stamens.

PANAX PSEUDOGINSENG. Tab. 137.

TUBERIBUS fasciculatis; foliis quaternis, nunc ternis, foliolis peltatim quaternis vel ternatis, lanceolatis, caudato-acuminatis, petiolatis, utrinque valdè attenuatis, duplicato- et cuspidato-, nunc subinciso-serratis, secus nervos costamque suprâ cano-setosis; pedunculo terminali, sæpissimè trifido, petiolos subæquante; floribus hermaphroditis; baccis 2—3-spermis.

Panax pseudo-ginseng, Wall. in Act. Soc. Med. et Phys. Calcutt. 4. p. 117.

Incolit cacumen montis Sheopore Napaliæ, florens mense Junii, fructifer Augusto.

RADIX brevis, obliqua, pennam cygneam crassa, vestigiis caulium annotinis notata, subcylindrica, quandoque in tuber deorsum intumescens. TUBERA 3—5, approximata, sæpè deficiente radice connectente arcuè fasciculata, digitum crassa, pollices 2—3 longa, glabra, transversè et parallèlè levitèr rugosula, in filum crassum, radiculosum attenuata, pallidè grisea, intus luteola, succosa, odore nullo, sapore (si quis) debilissimo, mucilaginoso, vix aromatico. CAULIS erectus, simplex, gracilis, e basi calamum scriptorium usque ad digitum minimum crassa attenuatus, cylindricus, pedalis—2-pedalis, apice subpilosus, pallidus, altero latere sæpiùs purpurascens; rarò uno plures ex eadem radice. FOLIA ex apice caulis quaterna vel terna, verticillatim patentia, digitata. PETIOLI æquales, teretes, suprà profundè sulcati, 2—6-pollicares, pilis raris conspersi, basi intumescentes et subarticulati, ibique alternantes cum foliolis imperfectis (*stipulis* ?), raris, linearibus, sessilibus, vix semiungicularibus, interdum numero reductis, vel nullis. FOLIOLA quina, lanceolata, in acumen gracile, nunc longissimum attenuata, basi attenuato-acuta, marginibus totis profundè et acutè duplicato-serratis, quandoque subincisis et crispatis, serraturis longiusculè cuspidatis; peltatim patentia, membranacea, saturatè viridia, suprà secus costam, nervos, venasque obsita setis subulatis, erectis, cano-hyalinis; rugosula, subtus costâ nervisque obliquis, prominentibus, parùm venoso-reticulata, vix pilosula; magnitudine inæqualia: *intermedium* 4—5-pollicare, *lateralia* sensim minora, *extima* dimidiam vel tertiam modò partem reliquorum æquantia. PETIOLI *partiales* vix unguiculares, teretes, pilosuli, sulcati, basi articulati. PEDUNCULUS terminalis (caulis nempè apex continuatus) mediò vel versus basin trifidus, gracilis, teres, pilosulus, petiolis dimidiò brevior, fructifer eos æquans, rarissimè integer. UMBELLA terminalis, globosa, *flores* continens 20—30, parvos, hermaphroditos. INVOLUCRUM constans setis aliquot vagis, viridibus, basibus radiorum filiformium, semiuncialium interspersis. CALYX adnatus, 5-dentatus; *dentes* 5, parvuli, erecti, distantes, lanceolati, persistentes. PETALA 5, dentibus calycinis alternantia, patula, caduca, lanceolata, acuta, bilinearia, intus mediò lineâ longitudinali subcarinata. STAMINA 5, petalis alterna, iisdem paullò breviora, erectiuscula, citò decidua. OVARIUM turbinatum, læve, obsoletè compressum vel triangulare, 2—3-loculare; *ovula* solitaria, pendula. STYLI 2—3, persistentes, subulati, paullò divergentes, intus sulcati. STIGMATA obtusa, scabrida. BACCA globosa, obsoletè triloba, nunc subreniformi-biloba, diametro cerasi parvuli, lævis, stylis et calycis dentibus emarcidis coronata, nitida, coccinea, 2—3-locularis, carne molli, pallidâ, albicante. SEMEN solitarium in singulo loculo, ovatum, compressum, dorso gibbosum, margine inferiore subrecto ad angulum superiorem, i. e. apicem seminis, pro ingressu funiculi umbilicalis perforato. TESTA crustacea et fragilis, pallidè grisea, scabriuscula. MEMBRANA propria tenuissima. PERISPERMUM carnosum, semen figurâ exactè referens. EMBRYO minutissimus, in summa parte perispermi hærens, inversus. RADICULA supera.

While I was in Nipal in 1820 and 1821, I found on the top of Sheopore, one of the highest mountains which surround the great valley, near the remains of an old fortification, at an elevation of between 9,000 and 10,000 feet above the plains of Bengal, a plant which I had no difficulty in recognizing as a species of *Panax* nearly allied to the *Ginseng*, if not identical with it. There was a good number of individuals growing under the thick shade of Oaks and Rhododendrons, within an area of forty or fifty feet square; but the most diligent and frequently repeated search by myself and my assistants convinced me that the plant was fixed, as it were, to one circumscribed spot; nor were our subsequent endeavours to find it anywhere else in Nipal attended with success. The natives of the country to whom I showed it were totally unacquainted with it, and ignorant of its virtues, real or imaginary; they had not even a name for it to give me, although in ordinary cases they are so fertile and inventive, and so utterly to be mistrusted in matters connected with the nomenclature of the productions of their country. The Resident at the Court of Katmandoo, my worthy friend the Honourable E. Gardner, at my suggestion intimated to that Durbar, or Government, that the country possessed a plant which was held in the highest estimation among their Chinese neighbours, and which might perhaps prove the most acceptable gift that could be sent to the Emperor with the triennial embassy from the Rajah of Nipal. But the matter was not considered in the light of one deserving of any further inquiry; the Government being either unwilling to contribute so grand a panacea to a Court which they look upon with feelings both of awe and envy; or disinclined to ascribe to that Court so great a degree of folly as to pay the weight in gold for an insignificant root, possessing no earthly sensible qualities, and of which not even the name is known in its native country. A very advantageous consequence has resulted from this proud feeling; it is this,—that our little innocent plant continues up to this day in the undisputed and undisturbed possession of its secluded and small territory, on the top of the above-mentioned mountain.

It belongs to the class of plants called *rhizocarpic*. The root is lasting, shooting forth annually, at the commencement of the rainy season, one or two stems, which produce blossoms in June, and ripe berries in August, after which they die down to the ground. It is exceedingly like *Panax quinquefolius* of Linneus, and may perhaps ultimately be received as a variety only of that famous plant; I have however thought it best to consider it as a distinct species, of which I have given above the character and description. It seems to differ from the genuine *Ginseng* of Chinese Tartary and North America in the following respects: its tubers are more numerous and fascicled; the plant is much taller; its upper parts, chiefly the leaves, are somewhat rough with copious, gray, subulate, bristly hairs; while the other is perfectly smooth, except the leaves, which are sometimes very sparingly hairy. The leaflets are not ovate or obovate, as in that species, but lanceolate, ending in a very long acumen, their base acute, not rounded, and the margins are deeply indented with sharp and cuspidate double serratures. The inflorescence, too, differs; in our plant it consists most frequently of three long-peduncled umbels, the peduncles of which are either distinct or united below into one, with the flowers mostly all hermaphrodite; in the Linnean species the umbel is single, and the flowers polygamous: the berries in our species are mostly three-seeded, in the other they are always two-seeded.

It is highly probable that the root possesses as little claim to a place in our Materia Medica as the real *Ginseng*.

I have in vain endeavoured to preserve the young plants reared in the Honourable Company's Botanic Garden from roots and seeds sent down from Nipal. Like all other alpine productions, especially those which have a confined extent of growth, our plant is very impatient of controul, and soon perishes if removed into a climate not exactly resembling its own: it is therefore not likely that it will ever be induced to grow in Bengal.

The above description and observations have, with some slight modifications, been copied from an account of the plant presented by me to the Medical and Physical Society of Calcutta, and inserted in the fourth volume of the Transactions of that highly meritorious Body, which was printed after I left Bengal. Having since had the advantage of consulting North American specimens of *Panax quinquefolius*, Linn., in the Banksian Herbarium, gathered by Kahn and Bertram, and also those collected by my valued friend Dr. Boott, I am now convinced that the Nipal plant is another species, which may be distinguished by the marks indicated in the specific character, and further detailed in the observations I have given in the preceding pages. The question as to the identity of the plant yielding the *Ginseng* root of China and the American *Panax quinquefolius*, appears still to be involved in much obscurity, notwithstanding all that has been written on the subject. My inestimable friend Mr. Brown has justly pointed out to me that the discovery of a species so nearly allied to that of North America as my Nipal plant unquestionably is, in a country the Flora of which greatly resembles that of the northern parts of China, adds at least to the probability of a similar plant being found there also. But without further entering into this subject, I may refer the reader to an interesting and condensed account of the *Ginseng* contained in the North American Botany, and to the articles *Ginseng*, *Ninsi*, and *Sium Sisarum*, in Rees's Cyclopædia.

Plate CXXXVII. represents two individuals, one in flower, and the other in fruit, exhibiting some of the modifications both in the leaves and inflorescence. By an omission the leaves have not been shown conspicuously hairy on the upper surface, as they generally are. Fig. 1. 2. Flowers. 3. The same, dissected. 4. 5. Ovary, opened. 6. 7. Berry. 8. A berry, divided horizontally. 9. 10. Seed. 11. 12. The same, opened. 13. A detached root of the ordinary shape, with one of the tubers cut across in the middle to show the internal colour and structure.

SAUSSUREA GOSSYPINA. Tab. 138.

SIMPLEX, clavæformis, densissimè gossypina; foliis linearibus, dentatis, sessilibus, basi imbricantibus; floribus intra apicem plantulæ nidulantibus, sessilibus, aggregatis, involucriatis.

Incolit alpes summas Himalayæ versus nivem perennem ad Gossain Than et Bhuddrinath, florens mense Augusti.

Nomen monticularum, *Phaen-Comul*.

PLANTULA annua, erecta, simplex, 6—10-pollicaris, e basi pollicem duosve crassa sensim ampliata in formam clavatam, pugillum usque ad duos emetientem, apice obtusissimam et rotundatam, omninò vestita et quasi composita e lanugine alba, gossypina, longa, mollissima et densissima, persistente, ætate laxiuscula demùmque hinc indè in moles parvas secedente; *novella* glabrior. RADIX longiuscula, perpendicularis, subfusiformis, simplex vel bifida, e basi pollicari deorsum attenuata, glabra, fusca, intus alba et spongioso-carnosa; *fibræ* aliquot cylindræ, attenuatæ, carnosæ. CAULIS indivisus, cylindricus, carnosus, striato-sulcatus, pollicem ad duos crassus, inanis, omninò foliis lanugineque occultus, intus repletus telâ subtili, arachnoideâ, candidâ. FOLIA valdè approximata et numerosa, undique sparsa, erecta, 4—6-pollicaria, linearia, acuminata, acutè repando-dentata, deorsum valdè attenuata, subpetiolata, basi latâ, membranaceâ subimbricantia, subcarnosa, utrinque densissimè lanuginosa, subtus costâ prominulâ; *inferiora* breviora, citius emarcescentia; *summa* floribus proxima, cumque illis intra apicem plantulæ recondita, involucriformia, linearia, attenuato-acuminatissima, integerrima, 2-pollicaria, marginibus subtusque longissimè plumoso-lanuginosa; *juniore* magis patula, sinuato-dentata, lætè viridia, subtus tomento brevi obsita. FLORES plurimi, subcapitati, ad apicem caulis dilatatum, convexiusculum, foveolatum, 2-pollicarem densè conferti, sessiles, subfastigiati, pallidè violacei, inodori, oblongi, unguiculares, unâ cum foliis involucriformibus intra summitatem plantulæ prorsus reconditi; exteriores suffulti *bracted* lineari-lanceolatâ, acuminatâ, paullò longiore. INVOLUCRUM cylindricum, constans *squamis* pluribus, erectis, planis, imbricantibus, linearibus, acutis, serrulatis, argenteo-pallidis, aridis, nitentibus, apicem viridescens versus parum barbatis, cæterum glabris, exterioribus brevioribus. FLOSCULI circiter 12, tubulosi, hermaphroditi, centrales vix elevatiores, involucri longiores, inserti *receptaculo* plano, villosa-scribiculato, foveolis circumdatis denticulis albis, subulatis, erectis, inæqualibus. COROLLÆ *tubus* filiformis; *limbus* brevis, patens, divisus in *lacinas* 5, acutiusculas, lineares. FILAMENTA capillacea; *antheræ* lineares, acutæ, basi in aristas 2, longas abientes, violaceæ, connexæ in tubum cylindricum, 5-dentatum, limbo paullò longiorem. OVARIUM teres, glabrum, coronatum *pappo* polyphyllo, tubum corollæ æquante, longissimè plumoso, fusciscente, extus decrescente; *stylus* filiformis, lævis; *stigma* exsertum, 2-lobum; *lobi* oblongo-subclavati, obtusi, parum divergentes, basi hinc puberuli. SEMEN cuneiforme, læve, nitidum, fuscum.

So far back as in 1818 I received, through the kindness of the Honourable E. Gardner, specimens of this most curious little plant from Gossain Than, to which I alluded in a letter to Dr. Hamilton printed in the Edinburgh Philosophical Journal, vol. 1. p. 377. While in Nipal in 1820 and 1821, my people brought me specimens in a very fresh

and perfect state, one of which I sent to Calcutta, to a much esteemed relative of the late Sir J. E. Smith, with a request that she would forward it to that eminent botanist; in whose herbarium, now the property of the Linnean Society, the specimen is preserved, designated by the name of *Eriocoryne nidularis*, which I had proposed for the plant, and with the letter from my amiable friend attached to it, dated Calcutta, the 30th of September, 1821. But before I visited Nipal I had furnished specimens to the late Sir Joseph Banks and others, and in 1824 I transmitted numerous specimens to the Honourable Company's Museum at the India House. The author of the *Prodromus Floræ Nepalensis*, with that delicacy of feeling which does him such infinite credit, and which he has uniformly evinced ever since he has done me the honour to avail himself of the harvest gathered by myself and my native assistants, exercises his talents as a scholar, by castigating the specific name *gossypinus*, which I had given to the plant, and substituting *gossipiphora* for it, I presume on the same grounds which prompted him to disapprove a name given to another plant by the first living botanist in the following classical terms: "nomen (*Spermadictyonis*) nimis auris terribile est servandum."

Our little plant occupies rocky and exposed situations approaching the limits of perpetual snow, among the highest alps of the Himalaya, about Gossain Than, and also at Bhuddrinath, where it was found by Robert Blinkworth. Nature has protected it in a very extraordinary manner against the effects of the severe cold which prevails during nine months of the year in those lofty regions, and the intense heat of the short summer, by clothing it in a very thick and soft dress of cotton. Indeed the whole plant resembles a figure made of cotton, and formed into the shape of a club standing upright on the ground, its upper or broad end sometimes as thick as two closed fists. The root is long and tapering, almost fusiform. The stem is thick and fleshy, undivided, and completely hidden; it is hollow in the middle, the cavity being replete with a very delicate web of white fibres; it widens at the apex into a flattish, somewhat pitted area, from which the small flower-heads arise. The leaves are numerous, erect, inserted in all directions along the stem by their broad bases; they are toothed, and of a narrow linear shape; and, excepting the lowermost, and the tips of the others, they are entirely concealed in the white cotton. The flower-heads are small, oblong, pale violet, sessile, and crowded into a dense, slightly convex tuft, which is so completely imbedded within the nest formed by the copious woolliness of which the upper part of the plant almost entirely consists, that they can only be seen by dividing it gently, and by separating the inner leaves which surround the inflorescence like feathers.

Plate CXXXVIII. Fig. 1. A flower-head, detached. 2. Involucre, opened. 3. Floret, with its copious down. 4. Stamens. 5. Pistil. 6. A young plant from Bhuddrinath.

CEROPEGIA LUCIDA. Tab. 139.

VOLUBILIS, glabra, ramosa; radice fibrosâ; foliis oblongo-lanceolatis, acuminatis, basi acutiusculis; floribus umbellatis, laciniis calycis elongatis, recurvatis, corollæ lanceolatis, longè attenuatis, apice ligulato ciliatis.

Habitat in Sillet. Floret mensibus Septembris et Octobris. In Horto Calcuttensi floret eodem tempore.

PLANTA gracilis, ramosa, volubilis, glabra. RADIX fibrosa. CAULIS RAMIQUE teretes, glabri. FOLIA opposita, remotiuscula, patentia, oblongo-lanceolata, acuminata, basi acuta, nunc obtusata, 5-pollicaria, subcarnosa; suprâ atroviridia, lævia, lucida; subtùs pallida, levitèr venulosa, costâ elevatâ, scabriusculâ marginibusque minutim ciliatis. PETIOLUS gracilis, unguicularis vel pollicaris, pilis minutis, hyalinis asperulus. CORPUSCULA pauca, carnosa, subulata, axillaria et ad apicem petioli intra basin folii. FLORES pulchri, virides, purpureo-guttulati, glabri, 2-pollicares, pauci dispositi in *umbellas* solitarias, extrâ axillares. PEDUNCULI carnosì, rufescentes, cylindrici, puberuli; *communis* 1½-pollicaris; *partiales* pollicares. CALYX glaber; *laciniæ* lineari-subulatæ, elongatæ et graciles, extrorsum recurvatæ. COROLLA glabra, clavata; *limbus* tubum basi vix dilatatum longitudine æquans; *laciniæ* lanceolatæ, apice cohærentes, valdè attenuatæ in acumen ligulatum, obtusum, purpureum, pilis longis, fulgentibus ciliatum. GENITALIA basin tubi occupantia, valdè parva. CORONÆ STAMINEÆ lobi conniventes, cuneati, obtusi.

Plate CXXXIX. Fig. 1. Calyx opened, showing the pistil. 2. Corolla opened, with the column at the base. 3. Column detached. 4. A detached lobe of the column. 5. Corpuscle, with the pollen-masses attached.

DIDYMOCARPUS OBLONGA. Tab. 140.

HABITAT super rupibus Sheopore Napaliæ, florens fructiferaque sub pluviis, Junio—Septembre.

RADIX fibroso-ramosissima. CAULIS erectus, cylindricus, subcarnosus, pubescens, rubicundus, 3—6-pollicaris, solitarius, nunc 2 vel 3 ex eadem radice. FOLIA ad apicem caulis paribus 2 rarè 3 approximativis, decussantibus, patentissimis congesta, subverticillata, oblonga, subfalcata, attenuato-acuta, inæqualitè duplicato-serrata, basi subobtusa, magnitudine inæqualia, 3—5-pollicaria; summum par, dum tria adsunt, multò minus; subsessilia, utrinque ferrugineo-pubescentia, reticulato-nervosa; *juniora* valdè rugosa, subvillosa; *radicalia* nulla. PETIOLUS $\frac{1}{2}$ -pollicaris, nunc modò lineam vel 2 longus, planiusculus. PEDUNCULI terminales, graciles, filiformes, teretes, rubicundi, sæpissimè tòt quòt folia, iisdem breviores, puberuli, bis dichotomi; *universalis* 2-pollicaris, *partiales* breviores. BRACTEÆ oppositæ, nunc ternæ, infra divisuras pedunculorum, lato-ovatae, subcordatae, parùm dentatae, obtusæ, amplexantes, patentes, concaviusculæ, membranaceæ, erubescens, glabræ. FLORES paniculati, brevè pedicellati, ternati solitariique ex dichotomiis, atropurpurei. PEDICELLI carnosii, cylindrici, suffulti bractearum pari majusculo. CALYX campanulatus, obtusè 5-dentatus. COROLLA cæteraque ut in sequente specie.

Plate CXL. Fig. 1. Detached flower. 2. Calyx, opened. 3. Corolla, opened. 4. Ovary, divided transversely.

DIDYMOCARPUS AROMATICA. Tab. 141.

Didymocarpus aromatica, Wall. in Edinburgh Philosophical Journal, vol. 1. p. 378.

Nomen Parbutteum, *Kumkuma*.

Habitat super rupibus arborumque truncis vetustis sylvarum Napaliæ et Kamaon; florens fructiferaque Junio—Septembre.

PLANTA erecta, subcæspitosa, 6—10-pollicaris. RADIX valdè ramosa, fibrosa. CAULIS solitarius, aliquandò 2 vel 3 ex eadem radice, carnosus, cylindricus, vel levitè compressus, indivisus, cano-pubescent, minutim punctulatus. FOLIA *radicalia* pauca, prostrata, semi-recondita, carnosia, pollicaria ad $1\frac{1}{2}$ -pollicaria, ovato-cordata, obtusa, crenulata, brevè petiolata, utrinque densissimè vestita pilis brevibus, adpressis, argenteis, punctis resinosis, rufis interspersis, suprà convexa, admodum rugosa, subtùs concava, nervoso-venosa, citò emarcescentia; interdum 2 alia *folia radicalia* longè majora, permanentia, erecto-patentia, lato-ovata, cordata, acutiuscula, grossè et acutè dentata, utrinque pubescentia et punctata, subtùs nervoso-venosa, magnitudine inæqualia, 5-pollicaria ad palmaria, suffulta *petiolo* sulcato, carnosio, 3—5-pollicari. FOLIA *caulina* ad apicem caulis paribus 2 approximativis, decussantibus disposita, brevè petiolata, patentissima, ovata, vel ovato-lanceolata, acuta, inæqualitè dentata, basi inæqualia, nunc subretusa, 2—3-pollicaria, utrinque adpressè cano-villosa, rugosa, nervosa, reticulata, *petiolo* insidentia tereti, suprà levitè sulcato, $\frac{1}{2}$ -unciali. PEDUNCULI terminales, 2 vel 3, rarè solitarii, erecti, carnosii, puberuli, rubri, bis tervè dichotomi vel trichotomi; *universalis* 2—3-pollicaris; *partiales* pollicares. BRACTEÆ infra divisuras oppositæ, majusculæ, ferè unguiculares, patenti-subdecurvæ, semiamplexantes, rotundato-ovatae, concavæ, rufescentes, extùs puberulæ, integerrimæ, nunc denticulo uno alterove notatæ, membranaceæ, deciduæ. FLORES terni vel quaterni, solitariique ex divisuris exterioribus pedunculorum, atropurpurei, inodori, brevè pedunculati, subnutantes, bractearum pari parvo suffulti, paniculam terminalem latam, elevatam, multifloram formantes. CALYX carnosus, campanulato-ovatus, coloratus, lævis, persistens, ore 5-fidus; *laciniæ* ovatae, obtusæ, inferior paullò minor. COROLLÆ *tubus* cylindricus, unguicularis, calyce triplò longior, basi levitè contractus, supernè ampliatus in *limbum* patentem, ferè dimidiò brevior, bilabiatum: *labium superius* breve, bilobum; lobi rotundati, obtusi: *inferius* porrectum, 3-lobum; lobi ovati, obtusi, intermedius duplò major, subcordatus. FAUX pervia, anticè callis duobus, lutescentibus, ad basin labii inferioris evanidis. STAMINA 5, inclusa; 2 *fertilium*, inferiorum, *filamenta* teretia, albida, parallela; *antheræ* ovatae, 2-loculares, nutantes, contiguæ et conglutinatae, loculis divaricatis; *sterilia* clavata, brevia, nuda. OVARIIUM oblongum, parùm compressum, longitudine calycis, læve, basi parùm contractà cinctum annulo cylindræo, carnosio, brevi, ore repando, pseudo-quadriloculare, polyspermum; *stylus* brevis, cylindricus; *stigma* intra faucem corollæ, carnosum, infundibuliforme, minutim ciliatum. CAPSULA plana, linearis, siliquæformis, lævis, fusca, stylo permanente, subulato cuspidata, basi acuta, subpedicellata, pollicaris, in duas partes planas, parallelas longitudinalitè partibilis, seorsum 2-loculares, juxta margines utrinque valvis 2 dehiscentes; *dissepimentum* angustissimum, contrarium; *valvulæ* parallelæ, *interior* angustior, margine involuto adfigens *semina* innumera minuta, subulata, nuda, ferruginea.

Thirteen years ago I forwarded a short account of this plant and of the genus to which it belongs to Dr. Hamilton, who inserted it in the first volume of the Edinburgh Philosophical Journal, published in 1819. It produces an aromatic drug, which is in high repute among the Hindus, especially their ladies, who use it as a perfume. It is called *Kumkuma*, also *Rani-Govindhi*, and consists of the dried primordial radical leaves, which are wrinkled, small, ovate, covered with dense, silvery, soft, adpressed hairs, intermixed with numerous minute, brown, resinous dots. While fresh they are almost an inch long, and very fleshy; when rubbed between the fingers they assume a reddish tinge. Their fragrance is of a very delightful kind, and continues long after they have been dried. Indeed all the species of this genus possess in a greater or less degree a peculiar fragrance, which is elicited by rubbing the green parts, but which is entirely lost in the dried state, except in the species just described.

With regard to this genus and the tribe of *Cyrtandraceæ* to which it belongs, I shall here only notice that the

former was first described by me in the paper referred to above, and afterwards by my departed friend Mr. Jack in the Malayan Miscellanies, vol. 1. published in 1820. Mr. Don afterwards gave an account of two genera belonging to the family to the Wernerian Society, before which it was read in January 1822; it was printed in the Edinburgh Journal of Sciences, vol. 7. (for 1822.) Mr. Jack sent an account of the family to Mr. Lambert, which was presented to the Linnean Society in May 1822, and inserted in the 14th volume of their Transactions, published in 1823.

Plate CXLI. Fig. 1. Corolla, opened. 2. Calyx, opened. 3. Pistil. 4. A withered stem, with ripe capsules, and some recent primordial radical leaves. 5. Capsule. 6. The same, divided horizontally. 7. Section of one of the two parts of the capsule.

DISCHIDIA RAFFLESIANA. Tab. 142.

FOLII subrotundo-ovatis; ascidiis confertis, pendulis, petiolatis, oblongo-ovatis, angulatis, obtusis; coronæ stamineæ lobis oblongis, obtusis, incurvis; folliculis lævibus.

Crescit in Singapur, super arboribus radicans, florens fructiferaque mense Novembris. Ad Malaccam et Sallongohr alibique, Gerardus König in Herbario Banksiano.

FRUTEX carnosus, lactescens, pallidè viridis, glaucescens, ramosissimus, altè latèque super arborum truncis radicans et serpens, supernè laxè dependens. RAMI longissimi et gracillimi, teretes, nodoso-articulati; *inferiores* pennam anserinam crassi, appendiculati, valdè radicales; *superiores* foliiferi, nutantes, subfiliformes. RADICULÆ præcipuè juxta ramos inferiores provenientes, fasciculatæ, ramosissimæ, capillaceo-fibrillosæ, longæ. FOLIA exactè opposita, remota, bifariè patentissima, suborbiculata, obtusa, basi subretusa, nunc rotundato-ovata, unguicularia, pollicaria vel sesquipollicaria, utrinque acutiuscula, insidentia *petiolo* crasso, cylindrico, transversè rugosulo, vix 2-lineari; admodum crassa et carnosæ, glauca, suprà plano-convexa, ad insertionem petioli munita ciliis paucis, carnosis, subulatis, citò evanidis, subtùs concaviuscula, avenia et enervia, marginibus recurvatis, scindentibus. ASCIDIA sive *appendices* ad ramos inferiores conferta, approximata, opposita, altero sæpè deficiente, brevè petiolata, pendula, foliis paucissimis interspersa, carnosæ, pallidè viridia, glaucescentia, demum flavicantia et emarcescentia, 2—4-pollicaria, oblonga vel ovato-oblonga, levitè curva, complanata, obtusa; nunc minima, ovata; ad latera obtusissimè et parè costato-angulata subfoveolataque, basi parùm contractà, gibboso-rotundatà, inversà, ita ut formatur *tubus* amplius, sed vix unguem longus, utrinque pervius, hinc, ad latus nempè petiolo oppositum integer, illinc fissus, ostio exteriorè rugoso, tumido, ferè circulari, interiorè, cavitatem ascidii respiciente, libero, obliquo, margine recurvato; *cavitas* angusta, plùs minùsve repleta radiculis densis, capillaceis, e rami proxima parte, imò ex ipso petiolo, vel ab utroque loco oriundis, trunco uno duobusve per introitum istum liberè decurrentibus; parietes atropurpurei, læves, nitidi; *petiolus* brevissimus, istos foliorum exactè referens, apice extùs serie ciliarum subulatarum, carnosarum, citò emarcescentium, cicatrices linquentium. FLORES pallidè flavi, lineas 3 longi, dispositi in *umbellam* parvam, rotundatam, solitariam, extra-axillarem petiolorum tàm foliorum quàm ascidiorum, istis dimidiò, hisce multoties breviorè, pedunculatam, peractà floratione parùm elongatam et subracemiformem. PEDUNCULUS cylindricus, carnosus, semiuncialis, apice capitato-incrassatus et foveolatus pro insertionem florum. PEDICELLI teretes, vix unguiculares, minutim puberuli, basi suffulti *dentibus* duobus foveolæ apicis pedunculi bractæformibus. CALYX patentissimus, profundè divisus in *laciniis* 5, lanceolatas, acutas, membranaceo-marginatas, ciliatas. COROLLA carnosæ, ovata, obsoletè 5-sulcata; *limbus* contractus, subcylindricus, divisus in *laciniis* 5, lineari-lanceolatas, obtusiusculas, minutim puberulas, conniventi-parallelas, versus apicem convexo-gibbosulas, æstivatione valvatas. COLUMNA FRUCTIFICATIONIS corollà dimidiò brevior, ovata, apice conica, obtusula. CORONA STAMINEA columnam dimidiam vix longitudine superans, 5-phylla; *foliola* antheris opposita, levitè recurva, profundè biloba, basi oblongà, latiusculà distantia; *lobi* oblongo-lineares, parùm divergentes, incurvi, apiceque obtuso introrsum nutantes. ANTHERÆ sagittatæ, obtusæ, apice membranaceo stigma obtegentes; *lobi* basis longè producti, ligulati, verticales. MASSÆ tenuissimæ, cereacæ, planæ, lineares, pallidè flavæ, basi receptæ glandulà corneâ, clavatâ, adscendente, è viridi fusciscente, ad apicem concaviusculà, paulò supra basin *corpusculi* oblongi, sulcati, fusci, lateralitèr insertâ. OVARIA 2, semicylindrica. STYLI brevissimi. STIGMATA acutiuscula, occulta. FOLLICULUS solitarius, subulatus, extrorsum attenuato-cylindricus, obtusissimus, basi vix angustatus, lævis, ferrugineus, 2-pollicaris. SEMINA valdè parva, plana, oblongo-obovata, margine submembranaceo, crenulato, supernè versus umbilicum evanido. COMA sericea, copiosa, semine multò longior. PERISPERMUM tenue. COTYLEDONES parvi, ovati, obtusi. RADICULA longa, cylindrica.

In the Banksian Herbarium there are specimens of this remarkable plant, which were found by König, and inscribed in the following manner by that accurate and indefatigable botanist: "Genus novum contortarum? Fulcræ 5 extra nectarium γ. Corolla monopetala, inflata, margine 5-dentato; reliquæ ut in Asclepiadibus. Habitat in sylvis copiosè prope Malaccam et Sallongohr; alibi rarior. Nummularia lactea minor, Rumph. Amb. tom. 5. p. 471. tab. 175. f. 2. et 3. Stipulæ reniformes; ast vesiculæ, cicatricibus verrucosæ, sunt neglectæ in figura." One of the specimens was gathered in September 1772, and sent from Madras by Mr. Robertson. It is a very extensive, branchy, smooth shrub, climbing over the trunks and larger branches of trees by means of numerous branchy and fibrous radicles, which are produced in great abundance along the larger branches. All the upper parts are fleshy and smooth, of a pallid glaucous-green colour, without being in the least mealy, abounding in a thick and viscid white milk. The young

branches are very long and slender, almost filiform, hanging down loosely. The leaves are disposed in remote pairs; they are thick and fleshy, of a broad oval, or nearly round form, an inch to an inch and a half long, without any visible nerves or veins, convex above, concave underneath, with sharp and recurved margins, supported by means of short, thick, cylindrical petioles. Along the lower branches, and very sparingly if at all intermixed with the leaves, are produced numerous large appendages, of a very singular structure, which give the plant a remarkably bulky and grotesque appearance, contrasting in a striking manner with that of the slender and pendulous, almost naked branchlets. They consist of crowded, opposite, pendulous, fleshy bags or reservoirs, from two to five inches long, of an ovate or oblong, more or less compressed form, the margins and apex blunt, the sides very irregularly and obtusely angular and wrinkled, perfectly smooth and shining, and destitute of nerves or veins. Their base or upper extremity is hollow and inverted, so as to form a short and wide tube or inlet to the cavity; that end of the tube which forms the opening at the base of the bag is wrinkled and convex, and on its inner side is inserted the very short, cylindric, curved stalk, by which the bag is attached to the branch, and which resembles in every respect the footstalks of the leaves, having moreover, like those, a series of small subulate bodies externally at its end; the side of the tube which corresponds to the insertion of the stalk is the shortest, and is slit longitudinally; the inner opening is oblique, with recurved, free margins. The cavity of the bag is narrow, and contains always a dense tuft of radicles, which are produced from the nearest part of the branch, or even from the stalk on which the bag is suspended, and which enter through the inlet by one or two common branches; its sides are smooth and shining, of a dark purple colour. I am unable to offer any conjecture as to the immediate use of these curious reservoirs, unless it be to protect the tender roots, which are always found in them in great luxuriance; for after continuing a certain time, the bags acquire a yellowish hue and gradually decay, leaving the roots to attach themselves to the trunk of the tree on which the plant grows. My excellent friend Mr. Lindley considers them as modified forms of leaves; an opinion which derives confirmation from the presence on their footstalks of the small subulate bodies, which are also found on the proper petioles of this plant, as well as of most, if not all the other members of the natural family to which it belongs. The bags contain generally a great number of small and harmless black ants, most of which find a watery grave in the turbid fluid which frequently half fills the cavity, and which seems to be entirely derived from without.

I found the plant at Singapur, on an excursion with the late Sir Stamford Raffles; and to that most amiable and excellent man, my dear departed friend and patron, I dedicate it. I have met with a plant very closely resembling it on the banks of the river Attran in Martaban, near Assamee, with flower and fruit, in the month of March: respecting this and some other species with which I am acquainted I offer the following observations.

D. clavata, foliis subrotundo-ovatis; ascidiis confertis, pendulis, subsessilibus, cylindricis, clavatis, arcuatis, marginatis, obtusè cuspidatis; coronæ stamineæ lobis oblongis, obtusis, incurvis; folliculis puberulis.

This species resembles *D. Rafflesiana* in its habit and mode of growth, and in producing abundance of reservoirs. These latter are however of a very different form; they are club-shaped, slightly curved, five inches long, compressed, surrounded with a thin and narrow margin, and gradually enlarging from the base into a rounded apex, which is obtusely pointed on one side; their structure is in every respect similar to that of the other species, and their cavity is always filled with roots. The leaves are broad ovate, almost orbicular, with an acute point, concave underneath; petioles very short. Flowers precisely as in the Singapore plant; they are yellow, with greenish lines between the laciniae. Follicle solitary, cylindric, subulate, two inches long, pubescent.

D. bengalensis, Colebr. A native of Sillet.

D. cuneifolia, foliis cuneatis, subretuso-cuspidatis, basi valdè attenuatis, ramisque furfuraceis.

I found this rooting on trees on the banks of the Attran river, without flower or fruit, towards the end of the month of March. It is undoubtedly a species of *Dischidia*, and is nearly allied to *D. bengalensis*, but differs essentially in the points contained in the above specific character.

D. Nummularia, Brown; *Nummularia lactea minor* (prima), Rumph. Amb. vol. 5. p. 472. t. 176. f. 1.* I found this in flower and fruit in March 1826, on the Attran river, near the place where *D. Rafflesiana* grows; also at Penang and Singapur, without flower, towards the end of 1822. Vahl's *Collyris minor*, Act. Soc. Hist. Nat. Hafn. vol. 6. p. 111. may perhaps be a different species from Rumphius's plant, which that author quotes as a synonym; it seems to be the same as a plant from the East Indies, gathered by König, of which I have seen specimens in the Banksian Herbarium, with oval, rather long-petioled leaves, which are not mealy. The structure of the columna staminea is precisely like that of *D. Rafflesiana*, and differs therefore in some degree from Mr. Brown's plant, on which he founded his genus.

D. Collyris. *Pustula arborum*, loc. cit. tab. 175. f. 3. On this plant Vahl founded his *Collyris* (loc. cit. p. 109.); and more recently Dr. Blume has established on it a genus which he calls *Conchophyllum*, (Bijdr. p. 1060.) I found

* The late Dr. Hamilton has pointed out in his copy of this work, now belonging to the Botanic Garden of Calcutta, that most of the references to Tab. 175 and 176 of the 5th Volume are wrong. Tab. 175. fig. 1. represents *Nummularia lactea major, alba*, p. 470, towards the bottom of the page: fig. 2. is *Numm. lact. mej. (prima)* p. 470, and not *Numm. lact. minor*: fig. 3. is correctly referred to *Pustula arborum*, p. 473. Tab. 176. fig. 1. is *Numm. lact. minor (prima)*, p. 472: fig. 2. is *Numm. lact. minor (altera)*, p. 473, and not *Numm. lact. major*.

this plant without fructification on the banks of the Attran, in the beginning of April. It is strikingly like Rumphius's plant, except in respect to the leaves, which in ours are very small and quite orbicular; and not lanceolate, as represented in the figure, which has been pronounced bad by Dr. Blume, and which in fact does not agree with the author's text. Vahl's *Sperlingia* (loc. cit. p. 112.) corresponds with *Hoya*, Br.

Plate CXLII. Fig. 1. Flower. 2. The same, opened. 3. A pair of pollen masses, attached to their glands and corpusculum. 4. Follicle. 5. Seed. 6. 7. Reservoir opened, to show the internal structure.

CERASUS PUDDUM. Tab. 143.

Cerasus Puddum, DeCand. Prodr. vol. 2. p. 537.

Prunus Puddum, Roxb. MSS.

Prunus sylvatica, Roxb. Hort. Beng. p. 92.

Prunus, Hardwicke in Act. Soc. Asiat. vol. 6. p. 362.

Crescit in montibus Hindustaniæ meridionalis, Napaliæ, Kamaon, Deyra, Sirmore, alibique, florens Octobre et Novembre, fructifera Aprili et Majo.

ARBOR magna, trunco diametrum pedalem usque ad 2-pedalem emetiente. RAMI cylindrici, epidermide lævi, nitidâ, cinereâ vel brunneâ. FOLIA sparsa, approximata, oblongo-lanceolata, attenuato-acuminata, subæqualitèr argutè et cuspidato-serrulata, basi obtusiuscula, 3-pollicaria, glaberrima, suprâ parùm rugosa, lucida, subtùs opaca, minutim reticulata, costâ gracili, elevatâ, nervis obliquis, parallelis, numerosis, ad axillas concaviusculis. PETIOLUS cylindricus, ferè pollicaris, suprâ angustè canaliculatus, apice pari uno duobusve glandularum planarum, sessilium, mucosarum. STIPULÆ nullæ nisi *squamæ gemmarum* lanceolatæ, caducissimæ. FLORES pulcherrimi, rosei, odorati, glabri, dispositi in *corymbos* ovatos, bracteatos, pedunculatos, ante evolutionem foliorum densissimè ad ramorum nudorum apices confertos. PEDUNCULI teretes, carnosì, rubicundi; *communis* vix pollicaris, basi apiceque *squamis* gemmarum diutius persistentibus, magnis, membranaceis, spathulato-oblongis, acutis, extrorsum glanduloso-dentatis, nunc subincisis, subunguicularibus, villis longis, canis ciliatis; *partiales* filiformes, unguiculares. CALYX cylindrico-clavatus, lævis, coloratus, unguem longus, 5-fidus; *laciniæ* ovatæ, acutæ, patentes, demùm reflexæ. PETALA subrotundo-ovata, patentissima, venosa, unguicularia, apice 2-denticulata. FILAMENTA numerosa, lævia, patentia, exteriora petalorum longitudinem æquantia; *antheræ* ovatæ. OVARIUM læve; *stylus* staminibus parùm brevior; *stigma* stellatim 3-dentatum. DRUPA parva, subovato-rotundata, lævis, pendula, hinc flava, indè rubra, putamine ovato, cuspidulato, rugoso, parietibus crassissimis.

This beautiful tree was discovered on the mountains between Hurdwar and Srinaghur by my highly esteemed friend Major General Hardwicke, who published the following short account of it in the Asiatic Researches, vol. 6. p. 363. "*Prunus*.—A cherry tree of common size, found in several places between the mountains. Leaves irregularly alternate, petioled, serrulated, smooth, shining, with two globular glands at the base. The fruit in clusters, about the size of the black Hertfordshire cherry, of a roundish oval shape, acid and adstringent in a ripe state, and of a dull red colour. The nut furrowed and thick. The wood is much esteemed among the travelling *Fakeers* for bludgeons and walking-sticks, and known in common by the name of *Puddum*."

The tree was found about the same time by Francis Pierard, Esq. formerly in the civil service of the Honourable Company, and now residing at Kew, to whose zeal in the cause of botany the Garden of Calcutta is indebted for several very valuable plants, among which I may name the interesting *Dendrobium Pierardi*, and *Pierardia sapida*. Both these gentlemen found the tree on the mountains about Hurdwar. I have also met with it there, and likewise in the valley called Deyra, in fruit in April. In Nipal it is very common, and when in flower in the months of November and December it is a most charming object, being entirely covered with its innumerable rounded clusters of rose-coloured blossoms, which completely conceal the branches. At all other seasons it forms a large, rounded, shady tree. The fruit is of the size of a very small cherry, yellow on one side, and dark red on the other, owing to one half of it only ripening; its taste is pleasant and refreshing, although never quite sweet. In the less elevated regions of Deyra this cherry ripens better than it does in Nipal, and both I and the party who did me the honour to accompany me on my excursion in that valley in 1825, enjoyed it almost as much as we should have done had we been encamped under a grove of cherry trees in Europe. The wood is reckoned very useful in Nipal; specimens of it and of about five hundred other sorts of wood from the East Indies, which the Honourable Court of Directors of the Company have placed at the disposal of the Society for the Encouragement of Arts, are now in a course of examination, and will be fully reported upon by the highly esteemed and excellent Secretary of that Society. To this report, which will form part of their Transactions, I beg to refer my readers for an account of the woods of most of the trees described in this work.

Plate CXLIII. Fig. 1. A flower opened. 2. The stone of the fruit.
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SMILACINA PURPUREA. Tab. 144.

RADICE moniliformi-articulatâ; caule adscendente, subflexuoso, supernè pedunculisque villosis; foliis alternis, secundis, sessilibus, amplexicaulibus, ovatis, acuminatis, plicatis, ciliatis; racemò terminali, subramuloso.

Habitat in montibus summis Napaliæ et versus Gossain Than, florens sub pluviis; *varietas* racemo simplici, floribus albis, foliisque magnis crescit in Kamaon, ubi detexit R. Blinkworth.

albis, folisque magnis crescit in Ramaon, ubi dicitur R. DZAH.

RADIX carnea, repens, subramosa, catenulato-articulata, radicem *Convallariæ oppositifoliæ* ex asse referens; *articali* depresso-globosi, fusi, glabri, *fibras* numerosas, crassas, cylindricas emittentes, vertice exsculpti foveâ magnâ, insertionis caulis præteriti anni superstitæ. **CAULIS** unicus, rarò duo tresve, erectus, carnosus, cylindricus, pedalis 2-pedalisvè, basi levitèr adscendens, pennam cygneam ad digitum minimum crassâ, pallidâ, parcè et breviter vaginatus; sursùm attenuatus, fuscescens, lineolis purpureis, parallelis guttulatus, ad insertionem foliorum subarticulatus obsoletèq; flexuosus, supernè levitèr pubescens. **VAGINÆ** 3, membranacæ, 1—2-pollicares, cylindricæ, basin foliorum subarticulatus obsoletèq; flexuosus, supernè levitèr pubescens. **FOLIA** alterna, subsecunda, interstitiis duplò longiora, caulis arcuè amplectentes, oris obliqui apice acuto, patulo; *exterior* brevissima. **FLORES** parvi, inferiora paulò remotiora, ovata, brevè acuminata, basi rotundatâ amplicaulia, sessilia, infimum subvaginans, levitèr plicata, margine parùm undulato pilis copiosis, brevissimis ciliata, suprâ lucida, subtus pallida, subcarinatò 9-nervia, 2—4-pollicaria. **PEDICELLI** unguiculares, suffulti bracteolâ linearî, acutâ, emarpedunculo brevi, cum pedicellis rachique carnosis, teretibus, cano-villosis. **PEDUNCULUM** brevè, cum pedicellis rachique carnosis, teretibus, cano-villosis. **PERIANTHIUM** subcampanulatum, carnosum, profundè 6-partitum; *lobi* oblongi, cescente, unâ alterè per pedunculum sæpiùs vagâ. **STAMINA** 6, erecta, perianthio dimidiò breviora, basi ejus inserta, lobis opposita, lævia; *filamenta* subulata; *antheræ* ovatæ, angustiores. **OVARIUM** ovatum, læve, subtriangulare et 3-sulcatum, 3-loculare; *ovulum* 1 vel 2 in singulo loco, axi adfixum; *stylus* brevissimus, 3-angularis; *stigma* carnosum, triquetrum, scabriusculum.

I have remarked above that a variety of this plant with large leaves, simple racemes, and with white, somewhat larger flowers, grows in Kamaon, whence it was sent to me by Robert Blinkworth. This may perhaps prove a separate species, but I am as yet unable to distinguish the plants specifically.

Plate CXLIV. Fig. 1. 2. Flower. 3. The same, opened. 4. Ovarium, opened.

CRINUM HERBERTIANUM. Tab. 145.

FOLIIS undique sparsis, recurvato-nutantibus, valdè undulatis, membranaceo-marginulatis, subtùs scapoque erecto, compresso subfurfuraceis; floribus densè umbellatis, subsessilibus, deflexo-cernuis; limbi æqualis laciniis revolutis, filamentis declinatis, stylo discolore.

Crescit in Pegu prope Rangoon, in fossis. Floret tempore pluvioso.

BULBUS magnus, globosus, vix in collum supernè contractus, diametro 5—7-pollicari. FOLIA undique sparsa, numerosa, laxè patentia, recurvato-nutantia, $1\frac{1}{2}$ —2-pedalia, basi vix contractà laxè imbricantia caulemque semipedalem simulantia, mediò digitos 4 lata, indè attenuato-acuminata, valdè undulata, membranaceo-marginulata minutimque crenulata; suprà lato-caniculata saturatè viridia, subtùs valdè glauca, convexa, multilineata. SCAPUS solitarius, nunc 2 ex lateribus bulbi oppositis simul provenientes, erectus, pollices 20 longus, digitum medium crassus, complanatus, furfuraceus, maximà ex parte purpureus, hinc viridescens. UMBELLA densa, magna, depressorotundata, diametrum usque ad pedalem emetiens. SPATHA magna, coriacea, 2-valvis; *lobi* oblongi, obtusi, e viridi purpurascetes. FLORES valdè speciosi, magni, fragrantissimi, 12 ad 16 in umbella collecti, subsessiles, curvaturà magnà deflexo-cernui, campanulato-infundibuliformes, erubescetes, limbo fauceque extùs latè purpureo-fasciatis; aestivatione oblongo-cylindrici, erecti, cuspidibus 5 elongatis, divergentibus cornuti. SQUMÆ lineares, canaliculatæ, erectæ, albæ, floribus intermixtæ, eorumque tubos subæquantes. COROLLÆ tubus ferè 4-pollicaris, basi viridis, cylindraceus, obsoletè 3-angularis, indè curvatus sensimque ampliatus, subcampanulatus, purpureo-fasciatus; *limbus* æqualitèr patens, laxiusculè nutans, tubo tertià parte brevior; *laciniæ* oblongo-lanceolatæ, acutiusculæ, recurvatæ, apice revolutæ. STAMINA declinata, vix limbi dimidium superantia; *filamenta* alba, filiformia, compressiuscula; *antheræ* lineares, longæ, arcuatæ, coloris aurei. OVARIVM compressum, *pedunculo* admodùm brevi, lato suffultum; *stylus* purpureus, longitudine staminum, cumque iis declinatus, apice adscendens; *stigma* obtusiusculum.

My most esteemed friend the Rev. Dr. Carey of Serampur suspects with me that this beautiful species is distinct from *Crinum zeylanicum*, which I found growing together with it about Rangoon. It closely resembles the figure of *Amaryllis zeylanica* in the Botanical Magazine, vol. 30. n. 1171., but the colour of its flowers is by no means so dark as in that plant. I have had the true *C. zeylanicum* and our plant in flower at the same time at the Calcutta Garden; but I regret that I have not been able to fix on any very satisfactory character by which to distinguish them. I have dedicated the plant here represented to the Hon. and Rev. W. Herbert of Spofforth, whose indefatigable zeal in the cultivation of foreign plants, and whose valuable labours in the arduous family of *Liliaceæ* are so well known and so highly prized.

WRIGHTIA MOLLISSIMA. Tab. 146.

FOLIIS ovatis, acuminatis, subtus ramulisque cano-villosis; corymbis erectis; tubo corollae calyce duplò longiore, pubescente; folliculis parallelis, calloso-multipunctatis, in fructum clavato-cylindricum cohaerentibus.

Crescit in montibus valli magnae Napaliae proximis, florens et fructifera mense Junii; etiam in Kamaon. In sylvis regni Oude fructibus maturis lecta Februario et Martio. In Horto Calcuttensi floret Aprili, Majo, fructusque profert Junio.

ARBOR habitu et staturâ *Wrightiae tinctoriae*. RAMI subdichotomi, teretes, fuscuscentes, punctis crebris, callosis conspersi; *juniores* glaucescentes, cano-villosi, uti omnes partes superiores lacte copioso scatentes. FOLIA brevè petiolata, patentia, opposita, interstitiis longiora, ovata, nunc oblongato-ovata, acumine gracili, lineari terminata, integerrima, basi rotundato-acutiuscula, 5-pollicaria, suprâ pubescentia, subtus villositate canâ, densâ, brevi, mollissimâ obsita, nervis numerosis, parallelis, obliquis, costâque prominentibus, venis transversis, reticulatis. PETIOLUS semiungicularis, villosus, suprâ plano-sulcatus, basi subarticulatus. CORYMBUS terminalis et e bifurcatione suprema ramulorum, subsessilis, lato-rotundatus, erectus, multiflorus, bis tervè trichotomus, foliorum par supremum vix superans, cano-villosus. PEDUNCULI cylindrici, obseurè complanati, carnosî; *communis* pollicaris vel infrâ; *partiales* eâdem circitèr longitudine, ad divisuras *bracteis* instructi parvis, linearibus, acutis, villosis, oppositis; inferioribus majusculis, foliaceis, unguicularibus. FLORES pollicares, carnosî, e flavo pallidè rubicundi, inodori, extus pubescentes, *pedicello* unguiculari suffulti. CALYX ovatus, persistens et sub fructu parùm auctus; *laciniæ* ovatae, obtusae, ciliatae, basi extus subgibbosae, intus *squamis hypogynis* geminatis, carnosis, ovatis, planis, majusculis, tubi corollae basi adpressis. COROLLÆ *tubus* amplus, cylindricus, calyce duplò longior, supra medium tumidus; *limbi* patentissimi, plani *laciniæ* cuneato-oblongae, tubo ferè duplò longiores, obtusae, parùm falcatae et inaequilaterales. CORONA 5-phylla, fauci intus adfixa, brevis; *foliola* erecta, carnosâ, aurantiaca, ovata, truncata, limbi laciniis opposita, 2- vel 3-fida, nunc ferè ad basin partita, ita ut corona 10- vel 15-phylla videatur. ANTHERÆ subsessiles, sagittatae, carnosae, dorso puberulae, conniventes in conum erectum, exsertum, coronâ paullò longiorem, mediò intus *stigmati* oblongo, glutinoso adhaerentes, deorsum acutè bilobae, utrinque per longitudinem totam polliniferæ. OVARIUM ovatum, glabriusculum; *stylus* brevis. FOLLICULI 2, semicylindrici, 8—10-pollicares, acuti, penduli, glabri, punctis valdè copiosis, callosis, elevatis, albis notati, paralleli, primùm cohaerentes, fructum oblongo-cylindricum, subclavatum, basi subangustatum, utrinque sulcatum, digitum ferè crassum formantes; dehiscentiâ levissimè divergentes, intus plani, margine lato, membranaceo, incurvo. SEMINA numerosa, oblonga, complanata, semipollicaria, ferruginea, glabra, ad extremitatem umbilico obversam, id est superiorem respectu folliculi, levitèr porrectam coronata *comâ* amplâ, sericeâ, ipso semine duplò longiore. EMBRYO siccitate vel aquâ mollitus roseus (ut dudum observavit illustrissimus generis conditor).

This tree unquestionably comes very near to *Wrightia tomentosa*, Roth., which I have found wild on the Irawaddi, among hills at Segain, opposite the city of Ava, and along the banks of the rivers in Martaban, and which also grows at Tavoy. Both seem to approach closely to *W. pubescens*, Brown. It appears to differ from the latter in having broader and more ovate leaves, longer tube of the corolla, and club-shaped follicles; these are much longer and slenderer, and nearly cylindrical in Roth's species.

Plate CXLVI. Fig. 1. Calyx, opened. 2. Corolla, opened. 3. Throat of the corolla, showing the corona staminea. 4. Follicles.

MICHELIA AURANTIACA. Tab. 147.

FOLIIS subovato-oblongis, attenuato-acuminatis, basi acutis, longiusculè petiolatis, subtus puberulis; gemmis, alabastris, ramisque tenellis fulvo-villosis; petalis 20, exterioribus lato-lanceolatis, subunguiculatis, intima linearia duplò superantibus.

Habitat in regno Pegu, ad Rangoon, florens Septembri.

ARBOR procera. RAMULI cylindrici, grisei, a lapsu stipularum alternatim obliquè annulati; novelli cum stipulis, foliis teneribus, alabastrisque villositate fulvâ, splendente, densâ, adpressâ obsiti; desiccatione flavicantes. FOLIA approximata, sparsa, undique patentissima, oblonga, in acumen tenuissimum attenuata, basi acuta, vel subdilatata; nunc ovato-oblonga; 6-pollicaria ad spithamæa, imò longiora, coriacea, suprâ lævia, lucida, subtus ad costam nervosque puberula, ætate omninò glabra, siccitate venoso-reticulata; juniora utrinque sericeò et adpressè pubescentia. PETIOLUS gracilis, sesquipollicaris, pubescens, basi intumescens, suprâ usque ad medium vestigio insertionis stipulae plano, lineari notatus, cæterum sulcatus. STIPULÆ longae, lineares, acuminatae, fulvo-villosae, in *gemmam* cylindricam convolutae, citissimè caducae. FLORES magni, fragrantès, axillares, solitarii, saturatè aurantiaci; eorum *alabastra* oblonga, fulvo-villosa, *spathæ* duplici, caducissimâ involuta. PEDUNCULUS columnaris, parè velutinus, basi et medio cicatrice annulari notatus. PETALA circitèr 20, lævia, crassa et carnosâ; *exteriora* lato-lanceolata, ferè 2-pollicaria, acuta, basi parùm angustata, quasi unguiculata; *media series* hisce breviora, dimidiòque angustiora; *intima* angustissima, linearia, pollicem longa. ANTHERÆ subsessiles, apiculatae, dorso carnosae. TORUS ovariorum sericeus, supra antherarum acervum in conum brevem elevatus. OVARIA ovata, puberula. STYLUS obtusus, recurvatus, supernè papillosus.

This tree seems to be different from any of those described and figured in Dr. Blume's superb work. It is certainly distinct from *M. Champaca* of Hindustan and from the species found in Nipal. Its flowers are larger than those of any of the other species with which I am acquainted, of a deep orange colour, and exquisitely fragrant. I have found a second species in the Burma country, on the banks of the Irawaddi, at Prome and Ava, also in Pegu and Martaban; it has also been sent to me from Tavoy. It resembles my *M. aurantiaca* in every respect except in the colour and size of the flower, which are like those of the common *M. Champaca*; perhaps it is only a variety of our tree.

Plate CXLVII. Fig. 1. Spathe, detached. 2. Flower, dissected. 3. Peduncle, with the torus and ovaries. 4. Stamens, detached. 5. Pistil, detached.

SAURAUJA FASCICULATA. Tab. 148.

FOLIIS oblongis, attenuato-acuminatis, argutè serrulatis, basi rotundatis, suprà glabris, subtùs transversè multicostatis, ramulis petiolisque furfuraceo-tomentosis et squamulosis, ferrugineis; pedunculis lateralibus, fasciculatis, filiformibus, lævibus, subtrifidis, trifloris.

Crescit in convalli Napaliæ parva, Noakote dicta, florens mense Junii.

ARBOR mediocris 20-pedalis. RAMI cylindrici, fusci, glabri, albo-punctati; *juniores* uti petioli obsiti tomento furfuraceo, copiosissimo, ferrugineo, squamulis intermixto patulis, subtridentato-truncatis, evanidis, in novellis imbricantibus. FOLIA ad extremitates ramorum approximata, sparsa, patentia, oblonga, attenuato-acuminata, serrulata, serraturis subincrassato-cuspidatis, basi rotundatâ integerrima, 6—12-pollicaria, coriacea, plana, suprà lætè viridia, transversè lineato-sulcata, glaberrima; subtùs tomento minutissimo, furfuraceo, pallidè ferrugineo, parcè squamuloso omninò oblecta, costâ valdè elevatâ, nervis suboppositis, parallelis, approximatis, filiformibus, conspicuis, ad marginem usque excurrentibus ibique reticulatim confluentibus, venulis capillaceis inter nervos parallelè transversis. PETIOLUS crassus, suprà sulcatus, pollicaris 2-pollicarisve. PEDUNCULI infra apices ramorum foliosos laterales, ex vestigiis foliorum delapsorum provenientes, valdè copiosi, sæpè spatium rami 1—2-pedale, quin pluripedale occupantes, erecto-patentes, 3—4-fasciculati, graciles, teretes, læves, rubicundi, carnosì, 3-pollicares, integri vel bifidi, mediò et infra divisuras instructi *bracteolis* subulatis, acutis, patulis. FLORES ex albo dilutissimè rosei, parùm odorati, terni, nunc subracemosi, longiusculè pedicellati, glabri. CALYX ovato-globosus, profundissimè 5-partitus, nudus; *laciniæ* ovatæ, obtusæ, concavæ, membranaceo-marginatæ, parùm inæquales, imbricato-conniventes. COROLLA calyce duplò major, subcampanulata, profundè 5-partita; *laciniæ* subrotundæ, minutim crenulatæ, patentès. STAMINA numerosa, basi corollæ brevissimè tubulosæ, extùs gibbosæ serie subduplici inserta, erecta, corollâ tertio breviora, villis aliquot sericeis intermixta; *filamenta* linearia, alba, apice subclavata; *antheræ* pallidè lutescentes, erectæ, cuneatæ, apice subtruncato poris 2 magnis dehiscentes. OVARIIUM ovatum, carnosum, læve, 5-loculare, pluriovulatum; *ovula* inserta placentis 5 axilibus. STYLUS crassus, carnosus, ferè ad basin 5-lobus; *lobi* subdivergentes, teretes, staminibus paullò breviores. STIGMATA simplicia, obtusa.

This tree closely resembles my *Saurauja Punduana*, but is specifically distinct from it. When in flower it is extremely handsome, which is the case also with the following species:—

S. Punduana, foliis elliptico-oblongis, acuminatis, serratis, basi attenuatis, acutis, suprà lævibus, subtùs transversè multicostatis, ramulis petiolisque furfuraceo-tomentosis et squamulosis, ferrugineis; pedunculis lateralibus, fasciculatis, filiformibus, trifloris, lepidosis.

A native of the Pundua mountains bordering on the district of Sillet, whence specimens were sent to me by De Silva. It is very nearly allied to *S. fasciculata*.

S. Roxburghii, foliis oblongis, attenuato-acuminatis, serrulatis, glabris, deorsum paullò angustatis, basi acutiusculis, subtùs obliquè nervosis; costâ levitèr lepidosâ, petiolis longiusculis, ramisque novellis parcè tomentosis, demùm glabris; pedunculis lateralibus, fasciculatis, trifidis, trifloris, tomentosis.—*Ternstræmia serrata*, Roxb. Hort. Beng. p. 40. Ejusd. Mss. et Icon picta.

A native of Sillet, whence I received specimens from Francis De Silva. In Dr. Hamilton's herbarium are preserved specimens which were gathered at Siupur on the Morung hills, and at Birjura. It blossoms in April and May, and according to Roxburgh ripens its berries in July and August.

S. tristyla, DeCand.—*Ternstræmia trilocularis*, Roxb. loc. cit.

Specimens were gathered on the island of Penang by Mr. Porter.

S. napalensis, DeCand.—*T. Gogana*, Hamilt.

I found this fine tree in very many parts of lower and upper Nipal, where it is called *Gokul*. It is in flower during the rainy season, and ripens its fruit in November. The natives eat the berries. Dr. Hamilton's collection contains specimens from Siupur only.

Plate CXLVIII. Fig. 1. Flower, detached. 2. 3. The same, dissected. 4. Stamens. 5. 6. Ovarium dissected.

QUERCUS LAMELLOSA. Tab. 149.

FOLIIS ellipticis ovatisve, serratis, planis, glabris, acutis, longè petiolatis, basi obtusis, subtus glaucis, venis ad serraturas productis, venulisque elevatis; cupulis solitariis, sessilibus, depressis, tomentosis, squamis in lamellas continuas, circumductas, laxè imbricatas, undulatas confluentibus; glande tomentosâ, umbonatâ, depressâ, cupulâ breviorè.—*Lindl. MSS.*

Quercus lamellosa, Hamilt. apud Smith in Cyclopædia Reesiana, in loco.

Nomen Newarrense, *Shulshee*: Parbutteum *Pharat-Singhali*.

Incolit montes Napaliæ, fructifera fine anni.

This noble Oak has been so well described by Sir J. E. Smith in Rees's Cyclopædia, that I have very little to add in this place. The young branches are thick, cylindric, and glaucous. Buds terminal, fascicled, or axillary and solitary, ovate, obtuse, with many rounded, villous and silky scales. Leaves very handsome, of a firm and leathery texture, sometimes a foot long, and as much as five inches broad, smooth and glossy above, more or less mealy, sometimes nearly white underneath. The fruit is remarkably large, as much as two inches in diameter.

The drawings from whence the engravings of this and the following species have been taken, were made by Mons. M. Gauci, whose extremely courteous and able services connected with the graphic part of this work I acknowledge with very great pleasure.

Plate CXLIX. Fig. 1. Cup of the acorn, divided vertically. 2. Acorn.

QUERCUS VELUTINA. Tab. 150.

FOLIIS ovato-lanceolatis, serratis, glabris, nitidis, utrinque concoloribus, basi cuneatâ integerrimis, petiolatis, venis intra marginem subevanescentibus, venulis inconspicuis; cupulis solitariis, brevè pedunculatis, depresso-turbinatis, velutinis, squamis in lamellas continuas, circumductas, arcuè imbricatas confluentibus; glande velutinâ, hexastylâ, depressâ, umbonatâ, cupulâ paullò longiore; ramis pustulatis.—*Lindl. MSS.*

Crescit in Tavoy oræ Tenasserim, fructifera Octobre;—Gulielmus Gomez, plantarum collector.

RAMI graciles, cylindrici, punctis innumeris callosis dense notati, fuscis, nitidi, glabri. GEMMÆ parvulæ, subglobulares, parùm villosæ. FOLIA versus apicem ramulorum approximata, undique patentia, lanceolata, acuminata, serrata, serraturis subobtusis, gibbosulis, remotiusculis, dimidiâ vel tertiâ inferiore parte integerrima, basi attenuato-acuta, 4-pollicaria, chartacea, lævia, lucida, plana, costâ subtus elevatâ, gracili, nervis obliquis, suboppositis, parallelis, filiformibus. PETIOLUS semipollicaris, suprâ sulcatus, basi levitèr intumescens. INFLORESCENTIA haud visa. FRUCTUS axillaris, solitarius, ferè sessilis. CUPULA depresso-hemisphærica, diametrum 8-linearem emetiens, pallidè ferruginea, mollissimè tomentosa et velutina, *annulis* constans 4 vel 5 concentricis, minutim crenulatis, convexiusculis; ad faucem contracta, incurva et parùm tumida. GLANS orbiculato-depressa, basi latâ inserta, dense villosa, subvelutina, coronata umbilico crasso, subconico, parùm extra ostium prominente, rudimentis stylium 6 terminato.

Plate CL. Fig. 1. Cup of the acorn. 2. Acorn.

PLATYSTEMMA.

CALYX ovatus, 5-fidus, æqualis. Corolla rotatâ, planissima, tubo nullo, limbo bilabiato, 5-lobo: labio inferiore majore, 3-lobo, basi contracto. Stamina 4, brevissima, æqualia; antheræ magnæ, reniformes, 1-loculares. Stylus longissimus, crassus. Stigma capitatum, integrum. Fructus . . .

Classis Linneana: *Didynamia Angiospermia*.

Ordo naturalis: *Scrophularineæ*, R. Brown.

Herba pusilla, rupestris, erecta, pilosula, monophylla, vel diphylla, floribus paucis, magnis, azureis, terminalibus, longè pedunculatis, geminatis vel subumbellatis, corollâ planissimâ (unde nomen), labio inferiore magno.

PLATYSTEMMA VIOLOIDES. Tab. 151.

CRESKIT inter muscos super rupibus montium Napaliæ superioris, florens mense Augusti.

PLANTULA elegans, annua, pollices 2 ad 6 alta, carnosæ, pilis obsita patentibus, mollissimis, longiusculis, fulgentibus, hyalinis, pulcherrimè moniliformibus, articulis decrescentibus, extimo subulato. RADIX constans fibrillis densè fasciculatis, capillaceis. CAULIS tenerrimus, ferè filiformis, 1½—3-pollicaris, teres, pilosus, erectus vel obliquè adscendens, apice 1- vel 2-phyllus, cæterum nudus. FOLIUM ad apicem caulis sessile, patens, planum, orbiculato-cordatum, obtusum, 2-pollicare, aliquandò ovato- vel obovato-cordatum, extorsum remotè sinuato-dentatum, ciliatum, basis integerrimæ sinu brevi, angusto, lobis rotundatis, conniventi-amplexicaulibus; suprà atroviride, opacum, pilis copiosis, erectis conspersum, subtùs argenteo-pallidum, obscurè venulosum, 7—9-nervium, nervis gracilibus, prominentibus, pilosulis, versus marginem reticulato-ramosis, præterea uno alterove e nervo medio vel costa obliquè proveniente; nunc 2 adsunt folia approximativissima, opposita, quorum alterum multò minus. PEDUNCULUS terminalis, e gremio folii quasi ortus, (caulis continuatus) solitarius vel geminatus, gracillimus, filiformis, nudus, erectus, pilosulus, 1- 2- vel 3-florus. Flos ratione plantæ sat magnus, cernuus, inodorus, lævis, amœnissimè azureus, centro minutim viridi-radiatus, subtùs albicans, pedicello longo, capillaceo, suffultus. BRACTEOLÆ 2 infra pedicellos subulatæ, acutæ, patulæ. CALYX ovatus, 5-dentatus, carnosus, vix ultra lineam longus; dentes lanceolati, acuti, patuli. COROLLA planissima, rotata, absque ullo ferè tubo, pollicaris, bilabiata, circumscriptione ovata; labium superius subquadratum, 2-lobum, lobis ovatis, obtusis, levitè divergentibus; inferius obovatum, altero duplò majus, 3-lobum, lobis ovatis, obtusis, parim divergentibus, intermedio vix minore, basi cuneato-angustatum; faux staminifera, supernè inscripta lineolis 7 viridibus, radiatim per basin labii superioris divergentibus. STAMINA 5, brevissima, glabra, ostio corollæ vix tubuloso intùs adfixa; fertilium filamenta æqualia, crassiuscula, subulata, parallela, per paria conniventia, basi parim torta; antheræ magnæ, reniformes, conniventes, supernè rimâ transversâ dehiscentes, 1-loculares; stamen quintum vel sterile, subulatum, castratum, infra sinum labii superioris, inter filamenta superiora insertum, hisce parim brevius, apice acutiusculo levitè recurvatum. OVARIUM rotundato-ovatum, læve, 2-loculare, polysporum; ovula placentæ axili, jugiformi densè inserta. STYLUS valdè longus, labium inferius æquans, supra hoc descendens, carnosus, teres, apice parim incrassatus. STIGMA parvum, capitatum, minutim papillosum, indivisum. FRUCTUS haud visus.

This elegant little plant forms unquestionably a new genus, very unlike any of the others belonging to the family of *Scrophularinæ*. The flowers are remarkably large for the size of the plant, and of a dark sky-blue colour; the corolla is perfectly flat. I have a second species from Kamaon, which was sent to me by Robert Blinkworth, and which may be called *P. majus*. It differs in having a longer stem, an ovate-cordate, acute, sharply sinuato-dentate leaf, and the common peduncles umbellato-bifid, each division bearing two long-pedicelled flowers, besides one or two pedicels from the bifurcation. This may perhaps be only a large variety of the Nipal plant; but as my specimens are not very good I am unable to determine this point.

Plate CLI. Fig. 1. Corolla enlarged, viewed from below. 2. The same opened, viewed from above. 3. Calyx, opened. 5. 6. Stamens. 7. Ovarium, opened.

LOBELIA ROSEA. Tab. 152.

Lobelia rosea, Wall. in Roxb. Flor. Ind. 2. p. 115.

Lobelia Dudiya, Herb. et MSS. Hamilt.

Habitat in convalli parva Noakote dicta Napaliæ, florens Martio. "In Mithilæ et Napaliæ inferioris ripis torrentium umbrosis, ubi vocatur *Dudhiya* (lac præbens)"; Hamilt. Mss. Montes prope Sillet, Francis De Silva.

Having given an account of this very elegant plant in the Flora Indica, I shall confine myself here to the following short view of the other Indian species of *Lobelia* with which I am acquainted:—

2. *L. pyramidalis*, Wall. in Act. Soc. Asiat. 13. p. 376.

Incolit plurima Napaliæ loca, florens fructiferaque per totum ferè annum.

3. *L. excelsa*, Lesch. ex Wall. in Roxb. Flor. Ind. 2. p. 114. Erecta, cano-villosa, mollissima; foliis oblongo-lanceolatis, utrinque attenuato-acutis, minutissimè denticulatis, brevè petiolatis; racemo terminali, maximo, e floribus, bracteisque foliaceis, densissimis composito, villosa, laciniis calycinis elongatis, tubum corollæ superantibus.

In montibus Nilghiry dictis detexit b. Leschenault de la Tour.

Since the publication of my account of this truly splendid plant I have been favoured with a very fine specimen in full flower, which was gathered in the Nilghiry by Mr. Noton, and which has enabled me to give the above somewhat improved specific character.

4. *L. nicotianifolia*, Heyn. ex Roth. et Roxb.

Habitat prope Bangalore, Heyne, teste Roxburghio. Montes Courtallum, Wight; Heyne in Herb. Madraspatano.

5. *L. colorata*, erecta, glabra, subramosa, caule tereti, purpurascens; foliis linearibus, sessilibus, denticulatis;

floribus racemosis, terminalibus, calycibus pubescentibus, angulatis, laciniis lanceolatis, tubum vix æquantibus, apice hispidulis, bracteisque glanduloso-dentatis.—*L. purpurascens*, Wall. Catal. Herb. Num. 1307; haud Brown.

Habitat in montibus Sillet confinibus, florens Augusto—Octobre; F. De Silva et Henricus Bruce.

6. *L. begonifolia*, Wall. in Act. Soc. Asiat. 13. p. 377.

Crescit ad loca humida, umbrosa Napaliæ, florens et fructifera toto ferè anno.

7. *L. radicans*, Thunb.?

Indigena in China, fide Roxburghio.

8. *L. zeylanica*, Linn. *L. Goalparæ*, Hamilt. MSS. et Herb.

Habitat in Sillet, florens sub pluviis; in Goalpara, Hamilt.

The account of this species, as well as the four that follow it, in Roxburgh's Flora Indica, was furnished by me. Linneus's description agrees well with the plant.

9. *L. stipularis*, Roth. *L. decurrens*, Ejusd. *L. trigona*, Roxb. *L. Heyneana*, Spreng.

Habitat ad loca humida Zeylonæ, Malabariæ, et Coromandelæ, Herb. Madr. Heynean. et Wightian.; in Bengala, Herb. Roxb.; Nathpur, Herb. Hamilt.; Kamaon, R. Blinkworth; in montibus Napaliæ legi 1821, ad Prome, et Taong Dong prope Avam, 1826.

I believe it will be found that the synonyms I have quoted above belong to one and the same species, for which I have retained the name first given to it together with a description by the veteran and excellent botanist Mr. Roth, notwithstanding that it appears founded on a misconception (consult Roxburgh's Flora Indica, vol. 2. p. 111.). The specimens received from Kamaon, those I gathered on Taong Dong, and some of those which I found in Nipal, belong to a marked variety, perhaps a distinct species.

Plate CLII. Fig. 1. Flower. 2. 3. The same, opened.

LINARIA RAMOSISSIMA. Tab. 153.

HERBACEA, prostrata, ramosissima; foliis inferioribus ovato-cordatis, lobatis, subhastatis, superioribus lineari-sagittatis; pedunculis axillaribus, solitariis, folio brevioribus, corollæ puberulæ calcare recto, brevi; laciniis calycinis angustissimis, capsulâque brevioribus pilosulis.

Antirrhinum diffusum, Herb. Heyn. *A. Cymbalaria*, Herb. Hamilt.

Habitat in ruderalis et petrosis Hindustaniæ et Burmæ, florens sub pluviis; prope Mirzapur ad ripam Gangis, 1820; ad Paghamew, Yenangheun et Avam ripæ Irawaddi, 1826; in Coromandelia? Herb. Heyn.; ad Patnam, Herb. Hamilt.

PLANTA annua, laxè prostrata, ramosissima. RADIX fibrosa, sublignosa. CAULES plures, undique extensi, graciles, basi pennam columbinam crassi, sæpius multò graciliores, pedales, 2—3-pedalesve, glabri, nunc pilis paucis, patentibus conspersi. RAMI alterni, simplices. FOLIA alterna, patentia, subapproximata, inferiora ovato-vel hastato-cordata, inæqualitèr, plus minùs profundè 5-loba, acuta, 1½—2-pollicaria; superiora 1½-pollicaria, lineari-sagittata, ferè integerrima, lobis basis parùm contractæ angustis, subdivergentibus, acutis; summa valdè parva, linearia, nunc basi integra; omnia glabra, 5-nervia. PETIOLI graciles, variè curvi, glabri vel parcissimè pubescentes; inferiores folia longitudine æquantes; superiores ferè capillacei, iisdem breviores. FLORES ex omnibus ferè axillis solitarii, parvi, glabri, flavi, nutantes, suffulti pedunculis subcapillaceis, glaberrimis, foliis paullò breviores, supremi iisdem longiores. CALYCIS laciniae lineares, pilis capitellatis conspersæ, corollâ dimidiò breviores. COROLLA oblonga, parùm pubescens, calcare brevi, attenuato-conico, recto; laciniis obtusis; palato pallido, bigibboso. CAPSULA globosa, calyce parùm minor, vertice stylo coronata, pubescens.

My friend Mr. Benthams, who has undertaken the elaboration of the family to which this plant belongs, informs me that it approaches very nearly to *Linaria cirrhosa*, Willd., which I have verified by consulting the specimens in his herbarium. It appears to me, however, that ours is a much larger plant, with the lower leaves much broader and hastate; its calyx and capsule are beset with upright, gland-capitate hairs.

I subjoin descriptions of two other plants, belonging to this and to a nearly allied genus.

2. *Linaria incana*, densè cano-villosa, caulibus prostratis, basi sublignosis; foliis ovato-lanceolatis, acutiusculis, basi subretusis, utrinque villosis, petiolatis; pedunculis axillaribus, foliis longioribus, corollâ extus pilosulâ.

Habitat in campis ruderalisque convallis Napaliæ, florens fructiferaque mensibus Martii et Aprilis.

SUFFRUTICOSA, prostrata, omnibus partibus densè obsita pilis canis, brevibus, mollissimis. RADIX lignosa, ramosa. CAULES plures, graciles, teretes, subfiliformes, prostrati, cano-villosi, pedales, simpliciter ramosi. FOLIA alterna, bifariè patentia, ovato-lanceolata, acutiuscula, integerrima, basi rotundata vel levitèr retusa, semipollicaria, vel pollicaria, petiolis duplò longiora, cumque iis utrinque densè cano-villosa, ciliata. FLORES valdè parvi, lutei, axillares, solitarii. PEDUNCULI ferè capillacei, folio sæpius longiores, fructiferi glabri. CALYCIS laciniae lanceolatae, membranaceo-marginulatae, ciliatae. COROLLA extus pubescens, intus purpureo-punctata, calyce duplò major, calcare

antrorsum curvato, subulato, tubo corollæ $\frac{1}{2}$ brevior, obtuso; *labium superius* adscendens, bilobum, obtusum, pallidè fuscum; *inferius* majus, obtusè 3-lobum, *palato* purpureo-guttato, cruciatim sulcato tuberculisque 4 notato. FILAMENTA basi pilosula, ferè æqualia. ANTHERÆ per pares connexæ. STAMEN *sterile* capillaceum. OVARIVM ovatum, puberulum, obscurè papillosum. STYLUS pubescens, teres. STIGMA convexum. CAPSULA ovata, stylo coronata, calycem persistentem subæquans, scabra, a vertice ad medium *valvis* 2 oblongis, oppositis dehiscens.

Antirrhinum gibbosum, caule erecto, paniculato, capitellato-piloso; foliis linearibus, carnosis, subsessilibus, inferioribus oppositis; floribus axillaribus, racemosis, villosis, calyce corollâ brevissimè calcaratâ brevior. Legi prope Assufghur in provincia Rohilcund, florens et fructiferum mense Aprilis 1825. In Bangalore, Herb. Madraspatan. nomine *A. Orontii*.

PLANTA erecta, paniculata, pedalis vel 2-pedalis, basi sublignosa, pilis frequentibus, capitellatis obsita, præsertim supernè et dum junior; adulta glabra. RADIX ramosa. CAULIS obsoletè tetragonus, calamus scriptorium ferè crassus. RAMI integri, subdecussantes, inferiores oppositi, superiores alterni. FOLIA angusto-linear, carnosæ, utrinque acuta, interstitiis parum longiora, 1—1½-pollicaria, ciliata, cæterum glabra, *petiolo* villosulo, brevi suffulta; *inferiora* opposita; *superiora* sive *floralia* dimidiò breviora, alterna, subsessilia, parum recurva. FLORES parvi, lutei, axillares, solitarii foliorum superiorum, iisdemque breviores, *racemum* terminalem ramorum 3-pollicarem formantes, fructiferum duplò longior. PEDUNCULI breves, capitellato-pilosi. CALYX corollâ longior; *laciniæ* lineares, pilosæ, subinæquales. COROLLÆ *calcar* brevissimum, obtusum, compressiusculum, inter lobos calycis posticos, breviores porrectum; *tubus* purpureo-punctatus; *labium superius* reflexum, trifidum, posticè concavum et villosum, lobis rhomboideis, 2-dentatis; *inferius* subæquans, bifidum, *lobis* rotundatis, obtusis, conniventibus, *sinu* angustissimo; *palatum* prominenter 2-gibbosum. STAMINA salvâ basi filamentorum lævia. OVARIVM et STYLUS hirsuta. CAPSULA ferè unguem emetiens, oblongo-ovata, glanduloso-pilosa, basi valdè obliqua deorsumque gibbosa, fauce contractâ, parum incurvâ anticè poris tribus, obtusè 3-angularibus dehiscens.

Plate CLIII. Fig. 1. Flower, enlarged. 2. Calyx. 3. Corolla. 4. Corolla, opened. 5. Stamen, detached.

PEDICULARIS CARNOSA. Tab. 154.

CAULE erecto, ramoso, villosa; foliis oblongis, multilobatis, inferioribus oppositis, lobis obtusè crenatis; floribus racemosis; calyce compresso, subcristato; corollæ labio superiore piloso, gibboso, rostrato-acuminato, inferiore subrotundo.

Crescit in monte Sheopur Napaliæ, florens Augusto.

RADIX constans fibris ramosis, longiusculis, teretibus, carnosis, ad extremitates subtuberoso-dilatatis. CAULIS adscendens, carnosus, cylindricus, basi pennam columbinam crassus, palmaris, pedalis, 2-pedalisque, villis canis, brevibus obsitus. RAMI pauci, alterni, graciles, nunc basi nudi. FOLIA patenti-erecta, approximata, carnosæ, oblonga, obtusa, parallelè multilobata, lobis rotundato-ovatis, æqualibus, obtusè crenato-dentatis, ciliatis, subdecurvatis; basi acuta, utrinque pilis hyalinis conspersa, suprâ atroviridia, convexiuscula, subtus costâ nervisque grossè reticulatis prominentibus; *inferiora* subopposita, 2-pollicaria; *superiora* alternantia, sensim minora; *floralia* subsessilia. PETIOLI carnosi, villosi, plano-sulcati, $\frac{1}{2}$ -pollicares. FLORES majusculi, rosei, foliorum floralium axillares, eorumque longitudinem subæquantes, solitarii, brevè pedunculati, dispositi in racemum terminalem ramorum caulisque, oblongum, 3—6-pollicarem. CALYX subcarnosus, oblongus, compressus, villosulus, parum nervosus, fauce obliquâ cristatulâ, subtus fissâ 5-lobus; *lobi* brevissimi, crenulati. COROLLÆ *tubus* albus, compressus, utrinque sulcatus, glaber, calycem æquans; *labium superius* saturatiùs tinctum, villosum, compressum, desinens in rostrum rectè descendens, attenuato-acuminatum, labio inferiore vix brevius; *labium inferius* patens, subrotundum, 3-lobum, lobis rotundatis, suprâ parum convexum et versus faucem notatum tuberculis 2 parallelis, albis. STYLUS glaber, sursùm incurvus, rubicundus, apice exsertus. STIGMA minutum, globosum.

I have found this handsome species only on Mount Sheopur in Nipal, towards its summit, where it blossoms in the rainy season about August. The flowers are extremely elegant, of a bright rose-colour, with a white tube; the point of the upper lip crimson, almost purple. The leaves are lobed in a very remarkable manner along the margins, each lobe is rounded and obtusely crenate. I am acquainted with thirteen other species of *Pedicularis*, natives of India, the publication of which has been confided to the able hands of M. Duvau of Paris.

Plate CLIV. Fig. 1. Flower. 2. 3. Calyx and corolla, opened.

CONVOLVULUS BARBATUS. Tab. 155.

FRUTICOSUS, volubilis, piloso-barbatus; foliis ovato-oblongis, acutis, integerrimis, basi rotundatis, subtus sericeo et adpressè lanuginosis, brevè petiolatis; floribus axillaribus, involucri bracteis longissimis, linearibus, canaliculatis, sub singulo calyce ternato-secundis; corollæ campanulatae limbo brevi, levitè 5-lobo.

Inveni ad Rangoon in Pegu; ad Donabew, alibique secus ripam Irawaddi, florens Septembre.

FRUTEX magnus, volubilis, omnibus partibus obsitus pilis longis, mollibus, patentibus, pallidè ferrugineis, subsericeis. RAMI longi, graciles, cylindrici, valdè pilosi. FOLIA alterna, patentia, interstitiis sæpè longiora, ovato-oblonga, attenuato-acuta, integerrima, basi rotundata, nunc subretusa, 5—6-pollicaria; inferiora distantia, spithamæa, nunc pedalia; membranacea, suprâ atroviridia, levitè plicata, obliquè lineato-sulcata, pilis longissimis, decumbentibus remotè conspersa et propter eorum bases subvesiculosas asperula, subtus elevato-nervoso-venosa, tomento adpresso, sericeo, densissimo vestita; novella cum ramulis densissimè lanuginosa; adulta glabriora. PETIOLUS pilosus, canaliculatus, curvus, $\frac{1}{2}$ -pollicaris. STIPULÆ nullæ. FLORES magni, sesquipollicares, dilutè flavi, axillares, 7—9-fasciculati, folio triplò breviores, involucri magno, polyphylo suffulti, centrales sessiles. PEDUNCULI breves, carnosii, pilosi; communis crassus, semi-unguicularis. INVOLUCRUM constans foliolis carnosius, setaceo-linearibus, patenti-incurvis, apice levitè convergentibus, suprâ sulcatis, glabris, subtus convexis margineque pilis longissimis, patentibus barbatis, 1— $1\frac{1}{2}$ -pollicaribus, corollâ vix brevioribus; 3, nunc modò 2 vel 1, infra basin singuli calycis vel ejusdem pedicelli unilateraliter insertis. CALYX parvus, glaberrimus, ovato-oblongus, brevissimè pedicellatus vel sessilis; lobi oblongi, membranaceo-marginati, imbricantes. COROLLA campanulata, lævis; tubus 1— $1\frac{1}{2}$ -pollicaris, basi brevissimâ et contractâ calyce obtectus, intus erubescens, transversè rugosus; limbus patens, tubo triplò brevior, obscurè 5-lobus, lobis retusis. STAMINA inclusa, æqualia; filamenta basi parùm pilosula; antheræ lineares. OVARIUM læve, disco flavicante, subquinelobo cinctum; stylus filiformis; stigma bilobum, lobis globosis, papillosis.

This is a very large and distinct species. All the green parts are bearded with remarkably long and dense hairs; the underside of the leaves is very hoary, silvery, and soft. The flowers are large, and of a pale yellow colour, with a tinge of pink within; they are collected in short, peduncled, axillary, solitary fascicles, surrounded by a number of narrow, very long, curved, fleshy, green bracts, which are thickly beset on the outside and margins with very long spreading hairs; two or three of these bracts issue sideways below each calyx or pedicel, forming collectively a large and wide involucre, the points of which converge slightly over the flowers.

Plate CLV. 1. Fascicle of flowers, surrounded by its involucre of bracts. 2. A detached flower, with its three bracts. 3. Bracts, separated. 4. One of the bracts cut off, to show its channelled structure. 5. Calyx, opened. 6. Corolla, opened. 7. Stamens.

POTHOS GLAUCUS. Tab. 156.

SCANDENS, valdè glaucus; foliis ovato-cordatis, petiolos nudos æquantibus, profundè pinnatis, pinnis oblongis, falcatis, caudato-acuminatis; staminibus sex, ovario hexagono adpressis.

Radicat supra arboribus in Napalia, tam inferiore quam superiore, florens versus finem pluviarum, mense Octobris.

FRUTEX magnus, ramosus, longè latèque super truncos arborum saxaque firmiter radicans, lævis, glaucus. CAUDEX digitum ad 2 crassus, cylindricus, e latere interiore exserens fibras radicales teretes, carnosas, villosulas. RAMI graciles, elongati, nutantes. FOLIA approximata, patentia, alterna, pedalia, ovato-cordata, acuta, profundè pinnatifida, coriacea, suprâ atroviridia, nitida, subtus valdè glauca, costâ crassâ et elevatâ; lobi utrinque 2—6, oblongi, apice falcato hinc acuminati et subcaudati, indè gibbosi, 3—6-pollicares, uncias 1—3 lati, marginibus rectilineis paralleli sinibusque angustis distincti; multinervi, nervis gracilibus, mediis crassioribus, venis aliquot transversè reticulatis, capillaceis; infimi inæquilaterales, deorsum valdè obliqui, exteriores plùs minùsve confluentes. PETIOLUS cylindricus, rectus, limbum folii longitudine æquans, suprâ sulcatus, basi dilatâ caudicem ramumve semiamplectens, apice pollicari cylindræo-intumescens. INFLORESCENTIA axillaris, solitaria, folio brevior, suffulta pedunculo crasso, cylindrico, glauco, petiolum subæquante, apice incrassato incurvo, ad medium arctè involuto bractæ membranacæ, lævi, fuscæ, deciduæ. SPATHA ovata, cucullato-concava, acuta, coriacea et crassa, flava, valdè glauca, 5-pollicaris, spadice tertiâ parte longior, demùm ferè plano-expansa, decidua. SPADIX cylindricus, obtusus, rectus, digitum minimum crassus, pollices 2—3 longus, omninò obtectus partibus fructificationis arctissimè imbricatis, spiralitèr tessellatis. OVARIA cuneata, hexagona, truncata, vertice notata stigmate brevi, mucoso, fusco, sessili, lineari, transverso, 1-locularia; ovula aliquot ad fundum loculi inserta. STAMINA plerumque 6, lateribus ovarii adpressè parallela, iisdem demùm parùm longiora; filamenta clavata, plana, fusca; antheræ apicem subtruncatum filamenti terminantes, bilobæ.

This is a large rooting climber, which covers the trunks of trees and rocks to a considerable extent. It is closely allied to Roxburgh's *Pothos decursivus*, but may be readily distinguished by its glaucous appearance.

Plate CLVI. Fig. 1. Part of the spadix. 2. 3. Pistil detached, with 6 stamens belonging thereto. 4. Detached stamen. 5. 6. Ovarium, opened.

DESMODIUM SEQUAX. Tab. 157.

FRUTICOSUM, erectum, virgato-ramosum; ramis teretibus petiolisque villosis; foliis 3-foliolatis, breviusculè petiolatis, foliolis lanceolatis, acuminatis, suprâ adpressè pilosis, subtus villosis, intermedio duplò majore; stipulis lineari-bus; racemis axillaribus, fasciculatis, folium æquantibus; pedicellis subgeminatis, patentissimis, villosis; legumine gracillimo, lineari, multiarticulato, utrinque multidentato, hamoso-piloso.

Habitat in montibus Kamaon, unde in Hortum Calcuttensem introduxit Robertus Blinkworth. Floret et fructificat fine pluviarum.

FRUTEX ramosissimus, erectus, paniculatus, 3-pedalis, obsitus villositate densâ, molli, patulâ. RAMI teretes, virgati, levitèr flexuosi. FOLIA approximata, alterna, bifariè patentia, 3-foliolata, circitèr 6-pollicaria; foliola lanceolata, acuminata, repandula, suprâ adpressè pilosa, subtus cano-villosa, nervosa, venisque transversis reticulata; lateralìa 2-pollicaria, basi obtusa, hinc parùm gibbosa, brevissimè petiolata; intermedium duplò majus, obsoletè rhomboideum, basi acutum. PETIOLUS communis villosus, teres, gracillimè canaliculatus, 1—1½-pollicaris; partialium laterales brevissimi, intermedius ferè pollicaris. STIPULÆ parvæ, lineares, acutæ, villosæ, caducæ; stipellæ diutius persistentes, setacæ. FLORES rosei, pedicellati, patentissimi, dispositi in racemos axillares, erectos, 2—4-fasciculatos, terminalesque paniculatos, attenuatos, brevè pedunculatos, folia subæquantes. PEDUNCULUS RACHISQUE recti, teretes, graciles, villosi; pedicelli tenerrimi, subfiliformes, unguiculares, alternatim geminati, vel etiam fasciculati, patentissimi, villosi; basi muniti bracteolâ setaceâ, brevi. CALYX parvus, oblongus, villosus, acutè et patentèr 4-dentatus, dentibus 2 ovatis, majoribus, suffultus bracteolâ subulatâ, caducâ. COROLLA calyce quadruplò major, bilabiata; vexillum ovatum, retusum, disco ad basin 2-maculato; carina divaricata, compressa, diphylla, alisque parallelis, oblongis, obtusis brevè unguiculatis. LEGUMEN lineare, gracile, rectum, parùm compressum, 1—2-pollicare, submoniliforme, multiarticulatum, obsitum pilis densis, brevissimis, hamosis, margine utroque obtusè dentato; articuli convexiusculi, infimi nunc remotiusculi, extimus stylo longo, demùm deciduo apiculatus.

Plate CLVII. Fig. 1. 2. Flower. 3. The same, dissected. 4. Pods.

PHAIUS WALLICHII. Tab. 158.

ACAULIS, foliis oblongo-lanceolatis, acutis; sepalis petalisque lanceolatis, labelloque cucullato crispo, integro acuminatissimis; calcare arcuato, emarginato, bracteis acuminatis. Lindl. Mss.

P. grandifolius, Lindl. in Wall. Cat. n. 3747. (haud *Loureirii*).

Limodorum Tankervilleæ, Roxb. Hort. Beng. p. 63. (planta e Sillet.)

Incolit montes Sillet confines, undè plantas viventes in Hortum Calcuttensem misit M. R. Smith. Floret Decembre—Aprili.

PLANTA speciosissima, erecta, glabra, 2—3-pedalis. RADICULÆ longæ, crassæ, cylindricæ, carnosæ, indivisæ. PSEUDOBULBUS magnus, ovatus, 2—3-pollicaris, basi a vestigiis foliorum annulatus, supernè foliferus, solitarius vel pauci seriat. FOLIA pauca, erecta, apice recurvato-patentia, lato-lanceolata, pedalia, 2—3-pedalia, attenuato-acuminata, basi attenuata, membranacea, suprâ atroviridia, lucida, plicato-nervosa, subtus 5-nervia, nervis prominentibus, valdè conspicuis, aliisque brevioribus interspersis. PETIOLI profundè canaliculati, a decurrente folio marginati, erecti et subparalleli, nunc caulem quasi mentientes, basi valdè dilatata alternatim imbricantes. SCAPUS ex sinu petioli enascens, solitarius, erectus, valdè crassus, basi pennæ cygnæ diametrum sæpè excedens, cylindricus, 2-pedalis, remotè bracteatus, apice gerens flores 8—10 maximos, alternantes, patentes, albo-fuscos, inodoros, digestos in racemum oblongum, ferè pedalem. BRACTEÆ distantes, erectæ, alternæ, lanceolatae, acutæ, lineatæ, pollicares bipollicaresve, basi amplexantes. RACHIS carnosâ, cylindrica, levitèr undulata. PEDUNCULUS cylindricus, pollicaris, ovarium æquans, suffultus bracteis lanceolatâ, acuminatâ, concavâ, ipso duplò longiore, citò deciduâ. PERIANTHIUM æqualitèr patentissimum, diametrum 3—4-pollicarem emetiens; foliola omninò distincta, plana, lanceolata, attenuato-acuminata; anticum demùm sursùm spectans, reliquis parùm latius, interiora parùm angustiora. LABELLUM sessile, convolutum-infundibuliforme, subadscendens, 3-pollicare, basi inferiori columnæ parti accretâ in tubum amplum, brevem, desinentem in calcar cylindricum, descendens, antrorsum curvum, ovarium longitudine æquans, apice bidenticulatum; limbus patens, crispato-undulatus, 3-lobus; lobi laterales obtusi, abbreviati, intermedius magnus, recurvus, lanceolatus, attenuatus et acuminatus. COLUMNÆ brevis, carnosâ, labello inclusa, eodemque dimidiò brevior, anticè lato-sulcata, sursùm valdè dilatata et marginata, apice subtruncato biloba, lobis denticulatis. ANTHERA magna, conica.

This plant is remarkably like *P. grandifolius*, but differs in its very acuminate bracteæ, sepals, and petals, and especially in the labellum not only tapering to a very acute point, as in *Brassavola nodosa*, but being destitute of the rich yellow and red marking of the Chinese species.—Lindl.

Plate CLVIII. Fig. 1. A detached flower. 2. Apex of the column. 3. Anthers, with pollen-masses.

ERIA CONVALLARIOIDES. Tab. 159.

Eria convallarioides: foliis oblongo-lanceolatis, distichis, plicatis; caulibus compressis, teretibus, striatis, sepalis petalisque ovatis, inæqualibus, extus villosis, labello unguiculato, ovato, apice tridentato; spicis axillaribus, oblongis, densissimis, pedunculatis, folio multo brevioribus, bracteis subulatis.—*Lindl. Orchid.* p. 70.

Crescit in montibus Napaliæ, super truncis arborum, florens mensibus Julii—Septembris.

RADICULÆ numerosæ, longæ, teretes, villosulæ, fibrillosæ. PSEUDOBULBI pauci, aggregati, carnosì, compressi, oblongi, 5—6-pollicares, unciam lati, erecti, glabri, dum recentes oblecti *squamis* bifariè imbricantibus, adpressis, plicatis, levitèr ventricosis, ovatis, membranaceis, superioribus acutis, apice liberis, usque ad pollices 2 longis, supremo nunc in folium desinente, inferioribus obtusis, sensim brevioribus. FOLIA ex apice pseudobulbi 3 vel 4, erecto-patentia, oblongo-lanceolata, acuta, 6—8-pollicaria, coriacea, plicata, atroviridia, lucida, subtus nervis pluribus gracillimis, subcarinatis notata, deorsum attenuata in *petiolum* 2-pollicarem, canaliculatum. SCAPÌ aliquot e sinibus foliorum orti, cylindrici, carnosì, pube hyalinâ conspersi, 2—3-pollicares, basi foveolâ bulbi immersi, squamulâque involuti brevissimâ, ovatâ; cæterum nudi, apice gerentes *racemum* oblongo-cylindricum, erectum, densiflorum, compactum, 3-pollicarem, obtusum, vix ultra basin limbi folii elevatum. FLORES parvi, albi, inodori, perquam densè approximati, patentissimi, ex ovario subsessili, cylindrico, pubescente nutantes; *bracteola* lanceolata, concava, ovarium subæquans, demum reflexa. PERIANTHIUM campanulato-globosum, subbilabiatum, patens; *foliolorum exteriorum anticum* lanceolatum; *lateralia* obliquè ovatâ, obtusa, duplè isto latiora, basi dilatâ, puberulâ infra columnam connata in sacculum brevem, parum compressum; *interiora* lanceolata, antico subsimilia cumque illo labium inferius perianthii efformantia. LABELLUM semper posticum, i. e. sursum versum, unguiculatum, foliolis exterioribus paullo brevius, læve, nudum; *unguis* brevis, canaliculatus, basis columnæ continuus, arcuato-adscendens; *lamina* parva, crassiuscula, ovata, concava, levitèr plicata, 3-loba, lobis parvulis, obtusis, intermedio majore, apice flavicante recurvato. COLUMNÂ brevis, crassiuscula, columnaris, basi producta, apice foveâ 3-lobatâ; stigma parvum, anticum. ANTHERA terminalis, purpurascens, ovata, obtusa, 2-ocularis, persistens. MASSÆ 8, clavatæ, albæ, ope glandulæ communis cucullo anticè insertæ. CAPSULA unguicularis, ovata, obtusè 3-angularis, lævis, basi columnæ superstitè coronata.

Plate CLIX. Fig. 1. 2. Flower. 3. The same, dissected.

ERIA EXCAVATA. Tab. 160.

Eria excavata: foliis lanceolatis, binis, plicatis; caulibus oblongis, obtusis, sulcatis; sepalis basi pilosis petalisque oblongis, obtusis; labelli trilobi, tricarinati, lobo mediò emarginato; racemis lateralibus, erectis, folio brevioribus, bracteis obovatis, recurvis, ovario multo brevioribus.—*Lindl. loc. cit.* p. 67.

Crescit rariùs in montibus altissimis Napaliæ, supra arborum truncis. Floret mense Martii.

RADIX constans fibris teretibus, ramulosis, lævibus. PSEUDOBULBI plures, arcuè fasciculati, seriatì, lignosi, cylindrico-clavati, digitum crassi, a pollice usque ad pollices 6 longi, erecti, parum complanati, glaberrimi, parallelè sulcati, a vestigiis foliorum remotè annulati, hinc indè foveâ excavati magnâ, valdè profundâ, ovali, unguem ferè emetiente, a pedunculi delapsi insertionè manente; basi laxè involuti *bracteis* membranaceis, alternis, ovatis, acutis, lineatis, supernè nudi, apice 2-phylli. FOLIA lanceolata, erecto-patentia, brevè petiolata, utrinque attenuata et acuta, coriacea, lævia, lucida, parum canaliculata, 5-pollicaria. PETIOLI breves, profundè canaliculati, basi dilatati. RACEMI infra apicem pseudobulbi laterales, pauci, solitarii, alterni, foliis breviores, brevè pedunculati, erecti, bracteati. PEDUNCULUS pollicaris, *rachisque* carnosì, cylindrici, canò densèque villosi; *fructiferi* elongati, glabriusculi. BRACTEÆ ovato-oblongæ, acutæ, membranaceæ, unguiculares, recurvato-patentes, seriùs dilabescentes, extus villosulæ; aliquot per pedunculum sparsæ, reliquæ minores infra singulum florem solitariæ. FLORES mediocris magnitudinis, pedicellati, flavicantes, subsecundi, inodori. PERIANTHIUM secundum; *foliola* lanceolata, acuta; *exteriorum lateralìa* basi parum dilatata, patentiuscula, subtus villosula, *posticum* glabrum; *interiora* parum angustiora, intra posticum exteriorum subconniventia et levitèr cum illo fornicata. LABELLUM adscendens, læve, cum columna producta articulatam, basi angustatum, marginatum, intus carinis tribus notatum; *limbus* 3-lobus, *lobi laterales* dentiformes, *intermedius* reniformis, nudus, patens, flavus. COLUMNÂ deorsum producta; pars libera brevis, conica, intra basin labelli occulta. ANTHERA ovata, parvula. OVARIUM longiusculum, villosum, cum pedicello pollicem emetiens.

Plate CLX. Fig. 1. 2. Flowers, enlarged.

EUGENIA BIFARIA. Tab. 161.

ARBOREA, lævissima; foliis oblongis, acuminatis, approximatis, brevè petiolatis, bifariè patentibus, lucidis, suprâ bullatis, subtus transversè nervosis, anastomosi vasorum duplici, valdè conspicuâ, a margine remotâ; corymbis axilla-

ribus, solitariis, ramosis; ovario clavato, gracili-pedicellato, petalis orbiculatis, unguiculatis; baccâ ovali, lobis calycis persistentibus, incurvis styloque coronatâ.

Incolit montes Sillet confines, undè specimina sicca misit Francis De Silva.

ARBOR. RAMULI cylindrici, cinerei, ad insertionem foliorum subcomplanato-dilatati, uti omnes partes glaberrimi; *recentes* alternatim compressi, obsolete tetragoni. FOLIA approximata, opposita, subbifariè patentia, oblonga, acuminata, integerrima, basi obtusa vel acutiuscula, interstitiis duplò triplòve longiora, 5-pollicaria, coriacea, lævia, suprâ lucida, bullato-rugosula, subtùs nervis frequentibus, subtransversis, versus peripheriam huicque parallèle arcuatis et confluentibus, costâque elevatis, venis numerosis, magnis, reticulatis, inter marginem et anastomosin istam nervorum in seriem utroque parallelam dispositis. PETIOLI teretes, semipollicares, suprâ sulcati, basi articulati. CORYMBI axillares, solitarii, oppositi, laxiusculi, foliis dimidiò triplòve breviores, brevè pedunculati, plùs minusvè divisi. PEDUNCULI oppositi, subbrachiati, complanato-tetragoni, suffulti pari *bracteolarum* parvulo, opposito, lanceolato. FLORES magni, albi, lævissimi, ternati, pedicello gracili, nunc longo suffulti. CALYCIS *tubus* (i. e. *ovarium*) oblongo-clavatus; *faux* cyathiformis, divisa in lobos 4 subrotundos. PETALA orbiculata, lobis calycinis duplo-majora, minutim crenulata, *ungue* brevi, lineari suffulta. STAMINA valdè longa et numerosa, patentissima; *filamenta* ferè capillacea, alba; *antheræ* parvæ, pallidæ, versatiles. STYLUS rectus, gracilis, persistens, staminibus paullò brevior. BACCA pendula, ovalis, obtusa, flava, 1½-pollicaris, glabra, vertice foveâ exsculpta magnâ, obtusè et incurvatò 4-lobâ, styliferâ.

My acquaintance with this species is derived from dried specimens, and from a beautiful drawing in the possession of my most esteemed patron and friend H. T. Colebrooke, Esq., to whom I am indebted for the accompanying engraving. It must be a very handsome tree at all times, on account of the elegant shining foliage with which it is most abundantly furnished; the flowers are large and ornamental, collected in opposite axillary bunches.

Plate CLXI. Fig. 1. Flower, opened. 2. 3. Ovarium, cut vertically and horizontally. 4. Fruit. 5. 6. The same, dissected. 7. Seed. 8. A leaf of the largest size, showing the double row of veins running parallel to the margins.

FINLAYSONIA.

COROLLA rotata. Stamina distincta, processibus faucis 5, capillaceis, erectis, apice uncinatis, alternantia, antheris bilocularibus. Pollinis massæ 20, granulosa, globosa, demùm apici plano-dilatato retinaculi exsulci, gracillimi, basi glandulosâ inserti adhærentes. Stigma magnum, ovatum, basi 5-gonum. Folliculi 2, divaricati, ovati, rostrato-uncinati. Semina obovata, plana, comâ parcissimâ, brevi, reflexâ, marginibus adpressâ.

Classis Linneana: *Pentandria digynia*.

Ordo naturalis: *Asclepiadearum* cohors *Periploceæ* Brown, familiam cum *Apocynis* conjungens.

Frutex volubilis, carnosus, lactescens, glaber. Corymbi florum parvorum ex axillis alternis. Nominavi in memoriam amici carissimi, beati Georgii Finlaysonii, juvenis literis elegantibus et scientiis, præcipuè chirurgicâ et botanicâ, morumque suavitate ornatissimi, qui ex itinere Siamensi et Cochinchinensi in patriam redux præmaturo succubuit fato.

FINLAYSONIA OBOVATA. Tab. 162.

Gurua obovata, Herb. Hamilt.

Crescit ad litora æstuariorum Gangis, Irawaddi et fluminum Martabaniæ, florens Augusto—Octobre, fructifera Novembre.

FRUTEX magnus, volubilis, ramosus, omnibus partibus lævis lacteque copioso scatens. CAULIS digitum minimum crassus, cylindricus, basi fibris radicalibus longis repens, *ramique inferiores* tecti epidermide fuscâ, nitidâ, punctis crebris, elevatis asperâ. RAMI teretes, parùm flexuosi, adque foliorum insertionem subarticulato-dilatati, sæpiùs subalternantes vel subdichotomi; *novelli* rufescentes, glauci, obsiti *squamis* oppositis, oblongo-lanceolatis, acutis, unguicularibus, erectis, laxiusculè et remotè imbricantibus, mox dilabescentibus. FOLIA opposita, petiolata, patentiuscula, sæpè adscendentia et secunda, obovata, obtusissima, nunc levitè retusa, terminata cuspidulâ latiusculâ, acutâ; integerrima, deorsùm attenuato-acuta, 3—6-uncialia, inferiora ramorum approximata, interstitiis triplò longiora, superiora eadem vix æquantia, remota; coriacea, plana, suprâ e flavescenti lætè viridia, lucida, basi absque ullis ciliis; subtùs glaucescentia, costâ albidâ, convexâ et elevatâ, nervis tenuissimis, vix conspicuis, parallelis, transversis, marginem subrecurvatum versus arcuato-confluentibus, venis minimè elevatis, numerosissimis, pulcherrimè et minutim reticulatis. PETIOLUS crassiusculus, pollicaris, plano-sulcatus, sæpè curvus, ad axillam serie ciliarum subulatarum, carnosarum, ramum ambientium, citò evanidarum, lineam transversam linquentium. CORYMBUS axillaris vel extra-axillaris terminalisve (ex axilla altera paris foliorum summi), pedunculatus, latò-rotundatus, multiflorus, folio brevior, primùm trichotomus, deinceps dichotomus; fructiferus valdè elongatus. PEDUNCULI crassi, cylindrici, carnosi, punctulati, sæpè erubescens; *communis* petiolo paullò longior; *partiales* breves, puberuli, inferiores oppositi, exteriores

divaricato-dichotomi, articulati. BRACTEÆ minutæ, carnosæ, infra divisuras oppositæ, iisdem adpressæ, lanceolatæ, ciliatæ, carinatæ, persistentes. FLORES parvi, e luteo fuscæ, fœtorem *Stapelie* spargentes, fasciculati, gemini ternive, suffulti *pedicello* carnosæ, brevi, subclavato, basi pari *bracteolarum* emarcescentium, vel duabus decussantibus munito; æstivatione ovati, obtusi, marginaliter imbricati. CALYX minimus, 5-partitus, plano-patens, fuscæ; *laciniæ* ovatæ, carnosæ, acutæ, pilis albis, brevibus ciliatæ, basi imbricantes, intus ad fundum sinuum *granulis* minutis, succulentis, solitariis, cum laciniis alternantibus. COROLLA plana, rotata, 5-partita: *laciniæ* ovatæ, obtusæ, leviter obliquæ, subtus glabræ, supra hinc (ad latus nempe interius dimidium) nudæ, inde purpurascens pilisque longis, rectis, mollissimis, candidis barbata; *faux* notata tuberculis 5 parvulis, laciniis alternantibus, singulis gerentibus *filum* erectum, stamini oppositum, eoque duplò longius, apice retrorsum curvatum, hamosum. STAMINA 5 erecta, distincta, glabra; *filamenta* perquam brevissima, planiuscula, fauci corollæ intra tubercula inserta; *antheræ* magnæ, ovatæ, carnosæ, parum distantes, apiculâ terminatæ brevi, latiusculâ, lanceolatâ, angulo recto super verticem stigmatis inflexâ, intus mediò stigmatis basi adglutinatæ, margine utroque longitudinaliter dehiscentes; *locula* parum introrsum versa, membranâ albâ, crenulatâ marginata, medio subcontracta. MASSÆ POLLINIS 20, minutissimæ, sphaericæ, albæ, granulosæ, quarum 2 vel 3 demum apici retinaculi singuli adglutinatæ, reliquæ angulo superiore vel inferiore loculi sæpius retentæ. OVARIA 2, arctissimè invicem cohærentia, oblongo-ovata, lævia, utrinque lineâ inscripta verticali, 1-locularia; *ovula* plurima, placentæ centrali adfixa. STYLUS filiformis, longiusculus. STIGMA magnum, carnosum, ovatum, basi truncatâ 5-angulare, lateribus convexis, apice acuto indiviso. RETINACULA 5, angulis stigmatis parallela, capillacea, fusca, exsulca, basi glandulâ albâ, minutâ, capitatâ angulis stigmatis basis adfixa, apice plano-dilatata, ovata, obtusa. FOLLICULI 2, carnosi, læves, 3-pollicares, divaricato-patentissimi, ovati, apice rostrato-acuti et uncinati, subtus ventricosi-gibbosi, subcostati, supra notati areâ plano-convexâ, margine crasso, incurvo circumdatâ, medio rimâ longitudinali dehiscentes. RECEPTACULUM magnum, fungosum, suturæ adfixum, oblique ovatum, subcultriforme, demum liberum. SEMINA plura, inversa, retrorsum imbricata, plana, bracteiformia, obovata, fusca, ferè pollicaria, obtusa, deorsum attenuata, margine tenuissimo, subscindente, basi acutâ munita comâ grossiusculâ, parvâ, sericeâ, ab umbilico retrorsum flexâ, marginibusque laxè adhærente, vix ultra medium seminis ad oppositam ejus extremitatem excurrente. STRUCTURA interior omninò ut in cæteris *Asclepiadeis*.

The flowers of this curious plant are so small that I have found it exceedingly difficult to trace the structure of their very minute organs of fructification. The column is almost globular, and is surrounded with five extremely delicate, white, erect, very slightly converging threads, which are twice its length, and bent back at the apex so as to form a small hook. Stamens perfectly distinct and somewhat remote from each other; filaments very short; anthers large, adhering with their centre to the middle of the stigma, and bursting inwardly along each margin; their apices broadish and bent down upon the stigma, which they almost conceal; the cells are narrow, membrane-margined, slightly contracted in the middle, each containing four most minute, globular, white, granular pollen-masses. Ovary single; style slender, longish; stigma large and fleshy, ovate, with convex sides and five-cornered truncate base; its apex acute and undivided. Retinacles five, longish, flattened, linear, almost capillary, of a shining brown colour; they are attached with their base to the corners of the base of the stigma by means of a white, soft, and spherical gland; they rest loosely on the obtuse angles of the stigma, extending as far as their middle, and are visible between the anthers; their apex is flattened, of an obovate, obtuse shape. As soon as the cells of the anthers burst, one of the two pollen-masses contained in each escapes and adheres to the upper or broad part of the retinacle, while the other is sometimes found remaining in the cell towards its upper end. The follicles are divaricate, of a ventricose ovate form, perfectly smooth. They burst along the upper or less convex side, where they are surrounded by an elevated incurved ridge or margin. The seeds are large, flat, obovate, elegantly imbricate; they appear to be naked, but on being detached from their fleshy placenta, a few silky whitish fibres are seen proceeding backwards from their acute umbilicus, parallel to the margins and closely adhering to these, some of the fibres reaching almost as far as the opposite or obtuse end of the seed.

Our plant agrees in several respects with *Cryptostegia*, Brown in Botan. Register, vol. 5. n. 435. (*Nerium grandiflorum*, Roxb.), and together with that genus connects the *Asclepiadæ* with the *Apocynæ*. Both are furnished with five appendages, rising from the throat of the corolla, opposite the stamens, alternating with the laciniæ, and with bilocular stamens adhering to the sides of the stigma. The retinacles exist in both, and resemble each other in general figure and position; but instead of being free, as in our shrub, the upper broad end adheres in *Cryptostegia* to the margins of the anthers; and the glandular knob by which they are attached to the stigma in our plant, is in that supplied by a linear process which is elongated vertically at both ends. But the great difference consists in the nature of the pollen, which in *Cryptostegia* continues always a homogeneous substance, whereas in our plant it is condensed into twenty globular masses. To this curious structure of the flower of *Nerium grandiflorum* I adverted in a paper, presented to the Asiatic Society of Calcutta in 1815 and printed in 1816, (see Asiatic Researches, vol. 12. p. 568, note at the bottom); so that I may, in this single instance, boast of having preceded the most eminent of all botanists in the announcement of a novel structure in the *Asclepiadæ*. Indeed, we have both been preceded by Dr. Roxburgh, who distinctly alludes to these retinacles in his manuscript Flora Indica quoted in the Botanical Register. It is remarkable that these retinacles appear at a much later period than in any other member of the family, either observed by Mr. Brown or myself; even shortly before the expansion of the corolla they are only indicated by a small linear milk-white body between the swelled margins of the anthers.

I have dedicated this new and remarkable genus to the memory of my very dear friend George Finlayson, Esq.

of Thurso in Scotland, Assistant Surgeon in His Majesty's 8th Regiment of Light Dragoons, and attached to the Mission sent by the Bengal Government to Siam and Cochinchina, in 1821. I had the happiness to become acquainted with that gentleman at Singapur, towards the close of 1822, and we returned together to Calcutta by the same ship. Unfortunately a deep-rooted consumption, caused by the enthusiastic zeal with which my amiable friend performed his duties, both as surgeon and naturalist to the expedition, made such frightful progress during the latter part of the voyage, that scarcely any prospect remained of his ultimate recovery. Still his return to Europe held out a feeble hope of his valuable life being prolonged; but that hope was soon frustrated; he died on his passage to England. Of the excellence of my friend's character, and the large share of knowledge which he possessed, it would be presumption in me to attempt offering any further proofs than what are contained in his Journal of the Mission, which was published, together with a short account of his life, by the late Sir Stamford Raffles, who highly appreciated his worth. He had made the most extensive and valuable collections in all branches of natural history; but owing to his painful and distressing illness, they were much injured and reduced before they reached their final destination at the Honourable East India Company's Museum.

I should have adopted the generic name *Gurua* given to our plant by Dr. Hamilton, although founded on a wrong native name supplied to him, if I had not printed the accompanying plate before I became aware of their identity, and if I had not been quite sure that that worthy botanist had he lived would readily have consented to the change.

Plate CLXII. Fig. 1. 2. Flower, enlarged. 3. Stamen, detached. 4. Retinacle, viewed from both sides, two pollen-masses adhering to the inner. 5. Pistil. 6. A pair of follicles. 7. One of these, detached and opened. 8. Seed. 9. A young shoot.

RHAPHISTEMMA.

COROLLA campanulata, tubo amplo, cylindrico, æquali, limbo 5-partito, patente. Corona staminea simplex, 5-phylla, foliolis carnosis, erectis, subulatis, medio ventricosis, filamentis oppositis, apice subexsertis. *Antheræ* membranaceæ, semioblicuæ, 2-loculares. Pollinis massæ cereæ, ovata, ventricosa, basi adfixæ, pendulæ. Stigma pentagonum, muticum. Folliculus solitarius, oblongus, subventricosus, lævis. Semina comosa.

Classis Linneana: *Pentandria digynia*.

Ordo naturalis: *Asclepiadeæ*, Brown.

Habitus: Frutex volubilis, lævis, lactescens, foliis magnis, cordatis, floribus speciosis, albis, racemoso-corymbosis. Proximè accedit *Kanahia*, Br. quæ verò differt habitu erecto, columnâ semiinclusâ, coronâ stamineâ apici tubi filamentorum insertâ demumque folliculis gracilibus.

RHAPHISTEMMA PULCHELLUM. Tab. 163.

Pergularia? *campanulata*, Herb. Hamilt.

Asclepias pulchella, Roxb. Hort. Beng. p. 21.

Nomen Bengalense, *Kulmi*.

Habitat in Sillet Bengalæ, undè in Hortum Calcuttæ Botanicum introduxit M. R. Smith; in Gualpara, F. Hamilton, M.D.; in Tavoy, Gulielm. Gomez; in Pegu prope Rangoon, 1826. Floret sub pluviis; fructificat Decembre.

FRUTEX magnus, latè super alios frutices arborumque truncos volubilis, ramosissimus, lactescens, omnibus partibus glaberrimus. RAMI cylindracei, exteriores longi et graciles. FOLIA magna, opposita, distantia, patentia, petiolata, ovato-cordata, acuminata, integerrima, margine obsolete repandula et subundulata, cæterum plana, sinu basis amplo, lato, mediò suprâ acervulo corpusculorum subulatum, carnosorum, lobis rotundatis, distantibus; membranacea, 3—5-pollicaria usque ad palmaria, quin majora, lævia, latè viridia, subtùs exstantè 7-nervia, tenuitè venosa, dum juniora glaucescentia. PETIOLI teretes, foliis dimidiò breviores, suprâ levitè sulcati, basi parùm incrassati inque axilla (more familiæ) fasciculo ciliarum brevium, ramum serie transversâ ambientium. FLORES magni, pollicares, candidi, demùm lutescentes, inodori, glaberrimi, longè pedunculati, fasciculati, dispositi in *racemum* simplicem, lato-ovatum, pauciflorum, extra-axillarem, solitarium, folio parùm brevior, erectiusculum; vel rariùs in *umbellam* bifidam, longè pedunculatam. PEDUNCULUS *communis* teres, petiolo parùm longior, abiens in *rachin* levissimè intumescens, irregularitèr flexuosam; nunc apice bifidus; *partiales* geminati vel ternati, vel subumbellati, 2—3-pollicares, graciles, teretes, patentissimi, suffulti *bracteolâ* lanceolatâ, acutâ, brevissimâ. CALYX ovatus, vix lineas 3 longus, albescens, profundè 5-fidus; *lacinie* subinaequales, ovatae, acutæ, membranaceo-marginulatæ, parùm ciliatæ, fundo corollæ adpressæ, basi subangustatae, ibique remotiusculæ, sinibus munitis ciliis aliquot subulatis, carnosis. COROLLA campanulata, æstivatione oblongo-clavata; *tubus* cylindricus, capax, semipollicaris, calyce multò longior, extùs dilutè viridescens, apice vix dilatatus; *limbus* patentissimus, tubum longitudine subæquans, divisus in *lacinias* 5 ovato-oblongas, obtusas, levissimè inæquilateras, apicem versus recurvas vel revolutas, æstivatione imbricatas; *fauz* ampla, pervia, nuda. COLUMNA FRUCTIFICATIONIS magna, alba,

carnosa, columnaris, salvis apicibus coronæ inclusa. CORONA STAMINEA simplex, erecta, 5-phylla, staminibus opposita; *foliola* libera, distincta, subulata (undè nomen generis derivatum), teretia, basi parùm contractâ supra basin dorsi filamenti inserta, staminibus duplò longiora, indè levitèr ventricosa, apice teretia, vix conniventia, faucem corollæ paullò superantia. FILAMENTA 5, fundo corollæ inserta, distincta, magna, prismatica, basi utrinque dente brevi, 3-angulari, acuto notata, subsagittata, dorso sulcata, marginibus convexiusculis invicem contigua, intùs ad latera concava, mellifera, medio carinâ elevatâ, crassiusculâ, longitudinali, convexâ pistillis laxè applicata. ANTHERÆ 5, parvæ, carnosæ, membranaceo-marginatæ, lateribus stigmatibus applicatæ, semiorbiculatæ, intùs, a carina ista filamenti continuata in 2 divisæ locula concaviuscula. POLLINIS MASSÆ 10, magnæ, pendulæ, e viridi flavescentes, cereacæ, læves, ovoideæ, obtusæ, marginè respectu paris exteriori convexo, interiore subrecto, lateribus convexis, plano-ventricosis, basi intùs subarticulatim adfixæ cruribus brevibus, divaricatis, clavatis *retinaculorum* 5 oblongorum, nitidorum, dorso sulco profundo exsculptorum, angulis stigmatibus sulcatis incumbentium, inter antheras conspicuorum. OVARIA cylindraceo-oblonga, lævia, latere interiore planiusculo parallela, attenuata in *stylum* brevem, teretem. STIGMA magnum, carnosum, depresso-pentagonum, vertice convexum et nudum. FOLLICULUS magnus, solitarius, oblongus, coriaceus, lævis, dependens, dorso convexus, ventre planiusculus, apicem obtusam versus parùm attenuatus, 6-pollinarius. SEMINA valdè numerosa, plana, ferruginea, ovata, lævia, membranaceo-marginulata, vix semiunguicularia, umbilico acutiusculo coronata comâ densâ, prælongâ, sericeâ.

This fine shrub is the largest-flowered *Asclepiadea* with which I am acquainted, and I have found it peculiarly adapted to afford a clear and complete insight into the organization and economy of that difficult family, so beautifully developed by Mr. Brown. If the analysis instituted by that illustrious botanist be repeated in a flower of our plant, even long before the corolla has become visible beyond the calyx, the pollen-masses will be found quite consolidated into a distinct form within the respective cells of their anthers. Soon afterwards the processes of the retinacles extend to the masses through the upper part of the anthers, which has now burst open. The stamens are epipetalous, and quite distinct and free; their inner concave side is divided into two lateral cells containing a sweet mucous fluid, by means of a vertical broadish ridge, which rests on the pistils. In *Sarcolobus* the stamens are strictly gynandrous, the anthers being sessile and attached to the base of the stigma; and this structure exists probably also in some other genera.

I cannot reconcile this shrub with the characters of any of the genera belonging to the family, although it seems to come very near to *Kanahia*, Br., as I have already pointed out. Dr. Roxburgh, in his manuscript account of our plant, which he calls *Asclepias pulchella*, observes that Rheede's figure of *Adakodien* would be a tolerably correct representation of it if the fascicles of flowers were long-peduncled. That plant, however, has long ago been formed by Mr. Brown into a most remarkable genus, very different from ours, and called by him *Holostemma*. The individuals of *Rhaphistemma pulchellum* which I found in Pegu, and which were collected in Tavoy by W. Gomez, differ in no respect from the Hindustan plant, except in having a pale purple broadish stripe running down the middle of each division of the corolla, and sometimes extending in small specks down the tube and even over the calyx.

I am acquainted with two species of *Holostemma*, namely:

1. *H. Rheedii* Spreng., foliis lato-ovatis, cordatis.—*Cynanchum cordifolium* vel *grandiflorum*? Herb. Russel. *Cynanchum annulare*, et *Asclepias convolvulacea*, Herb. Heyn. *A. annularis* Heyn. Herb. Wight. *Gomphocarpus*? *vulabilis*, Herb. Hamilt. *Asclepias annularia*, Roxb. Hort. Beng. p. 20.

Habitat in Malabaria, Rheede; peninsula Indiæ, Russell, Heyne, et Wight; Coromandelia, Roxburgh; Gualpara, Hamilton.

In Dr. Hamilton's valuable manuscript *Catalogue of a collection of dried specimens presented to the Honourable East India Company's Museum*, Rheede's and Roxburgh's plant is quoted with a doubt. He says that the Hindus call the shrub *Bara Dudhiya*.

2. *H. fragrans*, foliis oblongo-cordatis, summis oblongo-lanceolatis, basi cordato-subsagittatis, lobis subimbricantibus.

Crescit in montosis ripæ Irawaddi ad Scendya et Prome, etiam in monte Taong Dong haud procul ab oppido Avæ; florens Septembre—Novembre.

This plant differs from the first species in having much narrower and proportionally longer leaves: in other respects they are much alike. It abounds in milk. The flowers are large and beautiful, delightfully fragrant, and of a thick, fleshy structure: four or five are produced from a short peduncle, inserted on one side of the axil, and supported on longish, white, dotted pedicels. Calyx very small, under the broad retuse base of the corolla, divided into five ovate, obtuse, ciliate lobes. Corolla cup-shaped, white, with purple minute spots; lobes deeply separated from each other, ovate-oblong, obtuse, convex, and almost gibbous above, wrinkled and concave underneath. Column of fructification white, sharply five-keeled, naked, except at the very base, which is surrounded by a thick, fleshy, annular ring, which is slightly marked with five lobes, alternating with the corners of the column. Anthers ovate, obtuse, membranous, covering the five-cornered stigma. Pollen-masses very long, flat, cuneate, hanging down perpendicularly from the black, capillary, appendices of the retinacles, which are attached to the corners of the stigma in a very oblique, almost horizontal position.

Plate CLXIII. Fig. 1. Flower, two of the calycine lobes removed. 2. Column of fructification. 3. The same enlarged, all the divisions of the corona but one removed. 4. A detached stamen, with its division of the corona. 5. Pollen-masses and retinacle. 6. Follicle. 7. Seed.

THUNBERGIA HAWTAYNEANA. Tab. 164.

SCANDENS, lævis, glauca; foliis ovato-cordatis, obtusiusculis, subsessilibus, amplexicaulibus, coriaceis, integerrimis; floribus axillaribus, oppositis, tubo elongato, limbo patentissimo; seminibus semiglobosis. Wall. Tentam. Napal. vol. 1. p. 49. et 58.

Thunbergia erecta et cordifolia, Herb. Madraspatanum, et *T. cœrulea*, Herb. Wightianum in Museo Amplissimæ Procurationis Britannicæ Indiæ Orientalis asservata.

Habitat in jugo Nilghiry dicto. In Horto Calcuttensi floret tempore frigido.

FRUTEX ramosa, volubilis. RAMI graciles, tetragoni, parum pubescentes, glauci, dichotomi, dilatato-subarticulati, ad divisuras et axillas foliorum pilosuli. FOLIA opposita, brevissimè petiolata, patentia, subapproximata, ovata, levitè cordata, amplexicaulia, plana, acuta, integerrima, coriacea et firma, 2—3-pollicaria, utrinque opaca et admodum glauca, præcipuè subtus, ubi 5-nervia, nervis gracilibus, extimis obsoletis, minutim reticulata. PETIOLI perquam breves, canaliculati; superiorum foliorum omninò desunt. FLORES axillares solitarii, oppositi, pedunculati, magni, atropurpurei, valdè speciosi, inodori, foliis longiores. PEDUNCULUS gracilis, villosulus, semipollicaris vel pollicaris. CALYX membranaceus, glaber, glaucus, reticulatus, spathaceus, compressus, subsecundus, pollicaris, e basi latiuscula vel attenuatus, obtusiusculus, apice bilobus, demum divisus in *sepala* 2 lanceolata, plana, pollicaria. COROLLA infundibuliformis; *tubus* levitè curvus, pallidus, extus pubescens, intus flavus, calyce tertiò longior, sensim ampliatus; *limbus* patentissimus, ferè æqualis, tubo plus dimidiò brevior, laciniis suborbiculatis, retusis; *fauz* magna et pervia, nuda, circularis. STAMINA didynama, inclusa, glabra; *antherarum* lobi divergentes, acuti. OVARIUM parvum, ovatum, *disco* carnosus, viridescens insidens; *stylus* filiformis; *stigma* divaricato-bilobum, lobis latiusculis. CAPSULA pollicaris, rigida, basi subglobosa, indè attenuata in rostrum latum, acutum, utrinque sulco exaratum. SEMINA 2, hemisphærica, glabra, fusca, hinc plana, angustâ et profundâ cavitate exsculpta, magnitudinis seminis pisi majoris. COTYLEDONES hypogææ, valdè inæquales; *dorsalis* nempè orbiculata, ferè plana, dorso excavato *ventralis*, quadruplò majoris recepta. Cætera ut in fructu *Thunbergiæ coccineæ*, Wall. loc. citato.

This beautiful species is so widely different from all the other *Thunbergias*, as to be easily discriminated. The leaves are of a rigid and leathery texture, of an ovate-cordate form, perfectly entire, nearly sessile, stem-clasping, and very glaucous. The flowers are very large, and of the most beautiful deep purple colour. In short, the shrub is one of the most desirable and ornamental plants imaginable.

Plate CLXIV. Fig. 1. Calyx. 2. Corolla.

PÆDERIA LANUGINOSA. Tab. 165.

VOLUBILIS, densissimè cano-villosa; foliis lato-ovatis, cordatis, acutis, subtus niveo-tomentosis; paniculis nudis, sessilibus, axillaribus, terminalibusque, floribus extus albo-tomentosis.

Crescit in sylvis Pegu prope Rangoon; juxta ripam Irawaddi ad Prome, Yenangheun, alibique. Floret Augusto et Septembre.

FRUTEX magnus et extensus, latè super alios frutices volubilis. RAMI oppositi, cylindrici, uti folia subtus, densè vestiti tomento copioso, mollissimo, cano. FOLIA opposita, subapproximata, patentia, ovato-cordata, integerrima, acuta, plana, 5-pollicaria, palmaria usque ad pedalia, sinu basis lato, lobis rotundis, suprâ cano-villosa, subtus densissimè tomentosa, dum juniora candida, nervis subalternis costâque elevatis crassisque, venis reticulatis. PETIOLUS carnosus, teres, villosus, folio dimidiò vel triplò brevior, suprâ sulcatus. STIPULÆ oppositæ, triangulari-lanceolatæ, acuminatæ, adpressæ, membranaceæ, pubescentes, emarcescentes. CORYMBI axillares terminalesque, sessiles, inæquales, foliorum circitèr longitudine, cano-villosi, multiflori; paniculam ad apicem ramorum formantes magnam, oblongam, laxam. PEDUNCULI cylindrici, carnosi; *partiales* breves. FLORES magni, tubulosi, ternato-fasciculati, brevissimè pedicellati, foetidissimi, viridi-purpurascens, tubo albo. BRACTEÆ ad basin pedunculorum pedicellorumque parvæ, lanceolatæ, carnosæ, mox emarcescentes. CALYX ovatus, carnosus, villosus; *laciniæ* ovatæ, obtusæ, ciliatæ. COROLLÆ *tubus* cylindricus, latus, calyce quadruplò longior, extus albo-villosus, intus *fauz*que ampla; pervia atropurpurei, densè lanuginosi; *limbus* patentissimus, tubo tertiò brevior, plicato-5-lobus, suprâ lævis viridis, æstivatione et paulò postea purpureus; *lobi* 3-dentati, subtus mediò albo-tomentosi; dentes obtusi, laterales in plicaturis abbreviati. STAMINA inclusa; *filamenta* brevissima; *antheræ* lineares, erectæ, longæ, inæquales. OVARIUM subrotundum, glabrum. STYLUS brevis, filiformis, undulatus. STIGMATA 2 stylo staminibusque longiora, undulata, filiformia, divergentia, acuta.

This fine species is very different from all the others in its superior size, the dense white hoariness with which it is covered, and its showy panicles of large green and purple flowers. These latter, however, are very fetid, which is also the case with all the green parts when bruised.

Plate CLXV. Fig. 1. 2. Flower, enlarged. 3. Corolla, opened. 4. Calyx and pistil.

CALANCHOE TERETIFOLIA. Tab. 166.

FOLIIS triangularibus, decompositis, pedato-tripinnatisectis, petiolis dilatato-subamplectentibus; floribus paniculato-corymbosis, numerosissimis.—*Haworth MSS.*

Crescit in monte Taong Dong dicta, haud ita procul ab oppido Avæ sita, florens Novembre. An etiam in Pegu prope Rangoon? In Horto Calcuttensi floret fine anni.

HERBA, potius *suffrutescens*, orgyalis, succulenta, stricta, lævis, radice fibris constante paucis, parùm ramosis, succulentis. CAULIS valdè foliosus, sub florentia prima simplex, deinceps infernè parùm ramosus, ut in omnibus speciebus hujus generis teres, basi satis crassus, purpurascens, et foliorum emortuorum cicatricibus annulatus. FOLIA decomposita, tripinnata, valdè regularitèr decussata, opposita, parùm amplexantia, sæpiùs olivaceo-viridia, dodrantalia; *pinnæ* utrinque tres, pinnatæ; *lobi* lineares, subteretiuseculi, acuti, suprà parùm canaliculati; *pinnæ terminalis* longè producta, caudato-elongata, curvato-descendens, extrorsùm integra; *folia superiora* conformia sed sensim minora, desinentia in *bracteas* inferiores tripartitas vel rectiùs semipinnatisectas, supremas indivisas. PETIOLUS crassus, succulentus, convexus, suprà canaliculatus. PANICULA corymbosa, densa, ovata, basi longiùs ramosa; *bracteæ extimæ* squamæformes, succulentæ, *Crassularum* in modum flores suffultientes. FLORES racemulosi, 8 circitèr in singulo racemulo, secundi, pedicellati. SEPALA 4, lineari-lanceolata, acuta, lineas 5 longa, basi imâ unita. COROLLA hypocrateriformis, jasminæ, flava; *tubus* deorsùm valdè dilatatus; limbi 4-fidi *laciniæ* stellatim patentes, planæ, lanceolatae, tubo dimidiò breviores. STAMINA 12, quorum 4 medio tubo inserta, brevissima; 4 versus faucem majuscula, laciniis alternantia, parùm exserta; 4 *sterilia*, castrata, filiformia, longiuscula, inclusa, ex imo tubo corollæ, erecta, cum staminibus inferioribus sepalisque alternantia. OVARIA 4, oblonga, attenuata in *stylis* totidem breves; *stigmata* minuta, convexiuscula.—*Haworth MSS.*

I am indebted for the specific character and the description (partly derived from my own notes) of this and the next species to my worthy friend Mr. Haworth, whose indefatigable labours have thrown so much light upon the difficult and extensive family of plants to which the genus *Calanchoe* belongs.

I found this ornamental shrub on the mountains of Taong Dong, twenty miles from Ava; but it may perhaps also be a native of Pegu, although this is doubtful. It attains almost a man's height, and is easily distinguished at first sight by its very straight and rigid habit, and by its very regularly decussate leaves, which are tripinnate, with nearly cylindric, deeply channelled segments; only in the infant plant they appear entire, flattened, and lanceolate; very soon afterwards they entirely change their form. The flowers are of a bright yellow colour, very numerous, collected into a large, terminal, rounded and dense panicle.

Plate CLXVI. Fig. 1. A detached raceme of flowers. 2. Calyx, opened. 3. Corolla, opened. 4. Stamen. 5. One of the lower and largest leaves, natural size.

CALANCHOE VARIANS. Tab. 167.

Calanchoe varians, Haworth in Philos. Mag. & Ann. 1829. p. 302.

Habitat in Napalia. Etiam reperi ad ripam Irawaddi prope Yenangheun, in locis sterilibus petroleo scatentibus, florentem Septembre. Ab utraque regione in Hortum Calcuttæ introducta floret Novembre—Februario.

SUFFRUTEX succulentus, valdè robustus, glaucus, 3—4-pedalis. RADIX fibrosa. CAULIS cylindricus, basi digitum crassus, hinc purpurascens, simplex, demùm basi ramulum unum alterumve irregularitèr emittens. FOLIA opposita, patentissima, decussantia, valdè crassa et carnosa, plana, glauca, obtusè serrulata; *inferiora* simplicia, ovata, basi subretusa, 4—5-pollicaria; reliqua 3-foliolata; *foliola* lanceolata, attenuato-acuta, 3—4-quin 6-pollicaria, subæqualia, foliorum supremorum angusto-lanceolata, ferè linearia, canaliculata, crenata. PETIOLUS *communis* crassus, suprà canaliculatus, subtùs convexus, basi valdè dilatata cum opposito caulem ferè totum amplexans, pollicaris vel 2-pollicaris; *partiales* breves. PANICULA subcorymbosa, *Crassulæ* cujusdam speciei potius quàm *Cotyledonis* inflorescentiam æmulans, stricta, oblonga, infernè ramis aliquot erectis, longiusculis instructa, supernè ferè thyrsioidea. BRACTEÆ foliaceæ; inferiores 3-fidæ, foliis supremis subsimiles; mediæ subbifidæ; supremæ simplices, lineares, acutæ; sub floribus minutæ, squamæformes. FLORES pedicellati, dispositi in verticillos densiusculos, inferiores remotos. SEPALA 4, in culta planta rarissimè 5, linearia, acuta, apice levitèr patula. COROLLÆ 4-fidæ, in culta nunc 5-fidæ, flavæ *tubus* cylindricus, basi parùm dilatatus; *laciniæ* ovato-lanceolatae, acutæ, tubo plùs dimidiò breviores. STAMINA 8; summa series paullò exserta. *Stamina* 4 *sterilia* obsoleta (tam in culta quam in spontanea). PISTILLA subulata, usque ad inferiorem staminum seriem elevata.—*Haworth MSS.*

I have found this strong and robust species both in Nipal and in the Burmese territories, near the petroleum wells at Yenangheun, on the left bank of the Irawaddi. In the Calcutta Garden, where the plant has been introduced from both those countries, it thrives remarkably well. An account of it has been published already by Mr. Haworth, in the Philosophical Magazine and Annals, N. S. Vol. IX. from a plant brought home by myself, which blossomed in

His Majesty's garden at Kew. I have of course adopted the specific name given to the plant by Mr. Haworth, although he politely offered to alter it to one I had suggested for it at the time of its discovery, and which was engraved on the plate long before I became aware of a name having been published already. I therefore request that the name *Calanchoe subamplectens*, in Plate 167, may be altered to *C. varians*.

Plate CLXVII. Fig. 1. Flower. 2. 3. Calyx and Corolla, opened. 4. Lower leaf, natural size.

NIOTA LUCIDA. Tab. 168.

FOLIIS oblongis; umbellâ terminali, erectâ, fructiferâ longè pedunculatâ, pendulâ; floribus octandris.
Habitat in sylvis prope Amherst orâ Martabanâ, florens et fructus submaturos proferens mense Februarii.

ARBUSCULA omnibus partibus lævis. RAMULI graciles, laxiusculi, nutantes vel penduli, cortice glabro, fusco induti. FOLIA alterna, patula, approximata, oblonga, obtusè subacuminata, integerrima, basi acuta, 6—7-pollicaria, coriacea, suprâ valdè lucida, subtus ferè nitida, nervis capillaceis, remotis, subtransversis, ad marginem arcuato- et reticulato-anastomosantibus, vix elevatis, costâ gracili, venis reticulatis; aliquandò glandula una alterave parva versus basin folii. PETIOLUS gracilis, suprâ planus, semipollicaris. STIPULÆ nullæ. FLORES pauci, carnosi, compressiusculi, 2-pollicaris, fructiferus elongatus; *partiales* circiter 6, semipollicares, teretes. BRACTEÆ aliquot parvæ, lanceolatæ ad basin pedunculi communis et infra umbellam. CALYX brevissimus, 1-phyllus, obtusè 4-dentatus. PETALA 4, dentibus calycis alternantia, patentissima, pollicaria, oblonga, obtusa, basi parùm angustata et canaliculata, in alabastro cylindrico, puberulo imbricantia. STAMINA 8, patentia, seorsim glandulæ minutæ, concavæ, carnosæ insidentia, longitudinè ferè petalorum; *filamenta* filiformia; *antheræ* erectæ, conicæ, apice obtuso poro uno vel duobus dehiscentes? OVARIUM pedicello carnoso, brevissimo insidens, parvum, subrotundo-quadrangulare, 4-loculare, 4-spermum; *ovula* axi adfixa. STYLUS simplex, filiformis, longitudine filamentorum. STIGMA acutum. FRUCTUS immaturi laxè penduli, umbellati, pauci, læves, lucidi, compressi, obliquè obovati, vertice hinc obtusè cuspidati, margine altero gibbo, compresso, altero (interiore) latiusculo, sulcato, lateribus levitè ventricosi, reticulatis, 1-loculares, 1-spermi. SEMINA *matura* haud visa.

There can be no doubt that our plant is a congener of Rheede's *Karin-Njota* and of Vahl's *Vitmannia elliptica*, which the learned Dr. Blume has with propriety united into one species, which he calls *N. Lamarchiana*, placing the genus, with M. de Jussieu, in the family of *Simarubæ*. (Bijdr. p. 251 and 259.)

Plate CLXVIII. 1. Flowers. 2. The same, dissected. 3. Ovary.

VIBURNUM STELLULATUM. Tab. 169.

Viburnum stellulatum, Wall. in Decand. Prodr. vol. 4. p. 327.

Incolit sylvas vallis Napaliæ et montium circumjacentium, florens sub pluviis, fructiferum fine anni. In Kamaon legit Robertus Blinkworth.

ARBUSCULA erecta, 12—20-pedalis, trunco crassitie brachii, ramis teretibus, gracilibus, subscandentibus, griseis, junioribus pube densâ, stellatâ cinereo-villosis. FOLIA opposita, patentia, ovata, longè acuminata, levitè cordata, aliquandò basi rotundata, nunc ovato-lanceolata, extrorsum grossè et acutè serrata, cuspidibus subulatis, callosis; versus basin subintegerrima, 3—5-pollicaria, coriacea, suprâ rugosula, saturatè viridia, pubescentia, subtus pube copiosâ, stellatâ, laxiusculâ, molli oblecta, obliquè nervosa, inter nervos subtransversè venulosa. PETIOLUS teres, pollicaris, suprâ parùm sulcatus, basi cum opposito petiolo ramum lineolâ elevatâ amplectens. CORYMBUS terminalis, magnus, plano-patentissimus, pedunculatus, diametrum dodrantalem ad spithamæum emetiens, stellato-tomentosus, decompositus. PEDUNCULI teretes, divaricati, basi articulati; primarii pollicares, reliqui sensim breviores. BRACTEÆ lineares, parvæ, deciduæ. FLORES parvi, albi, terni, brevè pedicellati, odoris ingrati. CALYX minutus, tomentosus; *laciniae* lineares, acutæ. COROLLA lævis, æqualis, infundibuliformis; *laciniae* ovatæ, obtusæ, apice recurvæ. STAMINA corollâ parùm longiora, patentia; *antheræ* majusculæ, ovatæ, fuscæ. OVARIUM turbinatum, suffultum *bracteolâ* lanceolatâ, ciliatâ, caducâ. STYLUS brevis, carnosus, parùm complanatus. STIGMATA 2 vel 3, subulata. BACCA ovata, compressa, coccinea, lævis, utrinque sulcata.

Plate CLXIX. Fig. 1. 2. Flowers. 3. Calyx. 4. Corolla.

UNCARIA PILOSA. Tab. 170.

Uncaria pilosa, Roxb. Flor. Ind. vol. 2. p. 130.

Habitat in montibus Napaliæ et Kamaon, florens mensibus Aprilis et Maii. In sylvis Chittagong, Roxb.

Having given an account of this large shrub in Roxburgh's work, I shall confine myself here to a few remarks on the structure of the fruit, which has been subsequently sent to me from Kamaon by Robert Blinkworth. *Capsules* very numerous, densely collected into a large globular head, which measures from 2 to 2½ inches in diameter; they are ovate-clavate, short-pedicelled, hairy and ribbed, about 5 lines long, and crowned with the narrow-linear, longish laciniae of the calyx. *Seeds* very small, round-ovate, smooth, terminated at each end by long membranous linear wings, the lower one of which is bifid.

Plate CLXX. Fig. 1. Peduncle and bracts, with a head of unexpanded flowers. 2. 3. Flower. 4. The same, opened.

CONVOLVULUS WIGHTII. Tab. 171.

FRUTEX volubilis, molliter ferrugineo-pilosissimus; foliis rotundato-cordatis, acutis, trilobis, supra sericeo-villosis, subtus niveo-lanuginosis, nervis reticulatis, discoloribus; floribus subcapitatis, longè pedunculatis, axillaribus; foliolis calycinis bracteisque elongato-lanceolatis, pilosis.

Convolvulus lanuginosus, Herb. Heynean. (haud Vahl.)

Incolit montes Nilghiry dictas, ubi detexerunt domini Wight et Noton.

FRUTEX satis magnus, volubilis, ramosus, densè obsitus pilis patentibus, ferrugineis, mollibus; omnes partes recentes ferrugineè villosissimæ. FOLIA alterna, subdistantia, interstitiis sæpius breviora, patentia, subrotundo-cordata, 3- vel obsoletè 5-loba, summa nunc ferè integra, 3-6-pollicaria, supra saturatè viridia, rugosula, pilis densis, sericeis, ferrugineis, decumbentibus obsita; subtus niveo-lanuginosa, subarachnoidea, 7-nervia, reticulata, nervis nudiusculis, viridibus; lobi acuti, vix repando-crenulati, intermedius ovatus, maximus; folia novella densissimè vestita, ferè alba. PETIOLUS cylindricus, longitudine circiter folii, valdè pilosus. STIPULÆ nullæ. PEDUNCULUS axillaris, solitarius, longitudine varius, petiolum sæpius bis terve superans, apice gerens fasciculum subcapitatum, involucreto-bracteatum florum 3-7 magnorum, ex roseo purpurascens, brevè pedicellatorum. BRACTEÆ longæ, lineari-lanceolatæ, acuminatæ, pilosissimæ; duæ involucrifformes, patentes, pollicares infra capitulum, tresque infra singulum calycem, ejus foliolis inæqualibus, villosissimis simillimæ. COROLLA infundibuliformis, sesquipollicaris, extus villosa; limbus patens, ferè integerrimus, tubo longior. FILAMENTA inæqualia, ciliata, basi dilatata; antheræ lineares, albæ. Ovarium circumdatum disco carnosò, undulato; stylus filiformis; stigma constans lobis 2 globosis, papillois, rufuscentibus. CAPSULA magnitudine pisi majoris, globosa, lævis, 2-ocularis, 4-sperma. —MSS. Wightii.

This elegant and curious shrub was introduced in 1826 into the Calcutta Garden, from the Nilghiry, by Dr. Wight, to whom I am indebted for the detailed description given above. The plant, both in its wild and cultivated state, is abundantly covered with soft and spreading long hairs: the leaves are large, very soft and villous, somewhat rugose above; underneath they are covered with a white and dense tomentum, except along the reticulated nerves, which are almost naked, and therefore retain their green colour; they resemble in some degree the leaves of several of the Indian *Rubi*. The flowers are large, of a purplish rose-colour, a few collected in long-peduncled, involucred, axillary heads.

Dr. Wight has lately come back to this country on a temporary visit of a few years, having brought with him an herbarium, collected by himself in various parts of the peninsula of India, amounting to between 3000 and 4000 species, and comprising nearly 100,000 beautifully preserved specimens. This stupendous herbarium he intends distributing among the principal public and private collections throughout Europe, confiding at the same time the publication of the several families to a number of distinguished botanists, in the manner adopted by the Honourable East India Company with respect to their collections. It would be altogether needless to offer the slightest comment on an act of such unparalleled generosity and disinterestedness on the part of a private individual; but I beg to be allowed to express the sincere gratification which I feel in simply announcing the intention of my highly esteemed friend and fellow-labourer, wishing him health and strength both to accomplish that object, and to publish his valuable botanical researches.

Plate CLXXI. Fig. 1. Calyx. 2. The same, dissected. 3. Corolla.

ACANTHUS VOLUBILIS. Tab. 172.

FRUTICOSA, volubilis, lævis, inermis; foliis oblongo-obovatis, integerrimis.

Aquifolium indicum, femina, Rumph. Amb. vol. 6. p. 163. tab. 71. fig. 2. ?

arum Moluccarum, *Rumiphus*.

FRUTEX 2-pedalis, lævis. RAMI subdichotomi, volubiles, cylindrici. FOLIA obovata, vel oblongo-obovata, obtusa, integerrima, basi attenuata, patentia, opposita, interstitiis longiora, inferiora subterna, 3—5-pollicaria, subcarnosa, suprâ convexa, lucida, subtus pallida, costâ elevatâ, nervis remotis, oppositis, subtransversis, ad marginem arcuato-astomosantibus, subavenia. PETIOLUS unguicularis, suprâ sulcatus. SPICA terminalis. FLORES magni, ex albo dilutissimè lutescentes, numerosi, oppositi, approximati, sessiles, *spicam* formantes terminalem vel axillarem oblongam, 6-pollicarem. PEDUNCULUS communis brevis, uti *rachis* cylindricus. CALYX 4-phyllus, inæqualis, suffultus *bractea* oblongâ, ciliatâ, deciduâ; *foliola* lanceolata, acuta, concava. COROLLA pollicaris; *tubus* brevissimus, gibbosus; *labium* magnum, recurvato-patentissimum, 3-lobum; *lobi* rotundati, parvi, intermedius lateralibus minor. STAMINA didynama; *antheræ* magnæ, nutantes, loculis anticè cano-barbatis.

Plate CLXXII. Fig. 1. Flower. 2. Calyx, dissected. 3. Corolla.

PYRUS INDICA. Tab. 173.

UMBELLULIS sessilibus, paucifloris; foliis ovatis vel ovato-cordatis, (in juniore planta lobatis,) acutis, serrulatis, glabris; unguibus petalorum calyce brevioribus; stylis basi villosis.—*MSS. Colebr.*

Habitat in montosis Sillet Bengalæ orientalis confinibus, florens Martio, fructifera sub pluviis.

ARBOR erecta, parva, cortice fusco. RAMI patentes. FOLIA sparsa, glabra, ovata, vel ovato-cordata, acuta, argutè serrulata, 2—3-pollicaria, in plantis novellis lobata. PETIOLUS teres, villosus, semipollicaris. STIPULÆ filiformes, longitudine petiolorum. UMBELLÆ axillares, simplices, sessiles, paucifloræ. PEDUNCULI villosi, petiolis longiores, *bracteis* suffulti stipulis simillimis. FLORES albi, 3 vel 4 in singula umbella. LACINIÆ perianthii 5-partiti ovatæ, acuminatæ, utrinque villosæ. PETALA ovata, patentia, unguibus calyce brevioribus. STAMINA 30—50, corollæ longitudine. OVARIVM ovatum, villosum. STYLI 5, basi villosi, cæterum glabri, clavati, omnino distincti. POMUM rotundato-ovatum, basi levitè retusum, vertice vix depressum, glabrum, e viridi flavum, maculis aurantiacis conspersum, 2-pollicare.

For the above description, and for the drawing from which the engraving was made, I am indebted to Mr. Colebrooke, who observes, that the fruit has an austere taste, in a less degree however than the crab-apple of England, with some flavour of the quince.

Plate CLXXIII. Fig. 1. Ripe fruit. 2. 3. The same, opened. 4. Leaf of the young plant.

QUERCUS SEMICARPIFOLIA. Tab. 174.

FOLIIS obovato-oblongis, obtusis, indivisis, integerrimis, undulatis, basi retusis, subtùs stellato-pubescentibus, nervis costâque valdè exstantibus; fructibus axillaribus terminalibusque, solitariis vel geminatis, subsessilibus; glande ovatâ, umbonatâ, lævi, cupulâ imbricato-squamosâ, villosâ duplò longiore.

Quercus semicarpifolia, Smith in Cyclopædia Reesiana, in loco.

Quercus Banja, Herb. Hamilt. e Napalia.

Nomina Napaliensia, *Ghisee* et *Cusroo*.

Crescit in montibus altissimis Napalæ, florens mense Aprilis, fructifera Septembre. E Kamaon misit Robertus Colquhoun, Baronetus.

This noble tree has been well described by the late illustrious President of the Linnean Society, from specimens collected by Dr. Hamilton; but as these had no fructification, I shall here add an account of it. The male flowers form slender, crowded, flaccid and pendulous tomentose aments, occupying the apex of the new branches, and

measuring three or four inches in length. The acorns are axillary and terminal, mostly solitary, though sometimes geminate, oval, shining, brown, smooth, about an inch long, terminated by a short columnar style, and supported by an hemispherical cup, about half its size, having a sharp and entire circular orifice, with the outer surface densely tomentose, and covered with numerous, small, lanceolate, acute, imbricate scales. All the young parts, as well as the male inflorescence, the under surface of the leaves, and the cup, are covered with a copious, stellate, loosely attached tomentum. The leaves in young trees are more or less spinous-dentate. The tree inhabits the summit of lofty mountains, constituting, together with the common Nipal *Rhododendrum*, the chief forests, and attaining a gigantic size. It measures frequently in height from eighty to a hundred feet, with a girth of the stem, at six feet above the ground, of fourteen to eighteen feet; I have met with individuals of far greater dimensions on the summit of Sheopur. The wood is much esteemed by the natives, who employ it for various purposes of building, and for making bedsteads.

Plate CLXXIV. Fig. 1. 2. Acorns. 3. Part of the underside of a leaf, showing the stellate tomentum.

ARDISIA HYMENANDRA. Tab. 175.

Ardisia hymenandra, Wall. in Roxb. Flor. Ind. vol. 2. p. 282.

Habitat in montosis Sillet contiguus, ubi detexit et in Hortum Calcuttensem introduxit De Silva. Floret Martio.

Having given a detailed account of this handsome shrub in Roxburgh's work, it is unnecessary to repeat it here. The young leaves are elegantly veined with white stripes, and they are at all periods marked with numerous minute dots, intermixed with a few large semitransparent spots.

Plate CLXXV. Fig. 1. Flower-bud. 2. 3. Flower. 4. Calyx. 5. Anthers.

TETRADENIA LANUGINOSA. Tab. 176.

FOLIIS oblongo-cuneatis, acuminatis, triplinerviis, subtus glaucis, floribusque lanuginosis. Nees ab Esenbeck, infrà. Habitat in sylvis vallis Napaliæ, florens et fructifera Februario et Martio.

ARBOR admodum procera. RAMULI obtecti cortice cinerascete, scabro, apice ferrugineo-villosi. GEMMÆ elongatæ, cylindricæ, sericeo-villosæ, fuscæ, squamis adpressis, ovatis, obtusis, ciliatis. FOLIA sparsa, nunc subverticillata, approximata, patentia, cuneato-oblonga, acuminata, integerrima, deorsum attenuata, basi acuta, submembranacea, 7—9-pollicaria, supra lucida, lævia, subtus glauca, pilisque valde copiosis, mollissimis, ferrugineis vestita, triplinervia, nervis gracilibus elevatis, quibusdam ex intermedio alternis, obsoletè venulosa; novella densè lanuginosa, sericea. PETIOLI teretes, villosi, supra parum sulcati, ferè pollicares. UMBELLÆ numerosæ, laterales, globosæ, pedunculo brevi, crasso suffultæ, compositæ ex umbellulis pluribus, 5-floris. BRACTEÆ lanceolatæ, concavæ, ferrugineo-villosæ, caducæ. FLORES dilutè flavicantes, odorati, villis longis obsiti. PERIANTHIUM 4-partitum; laciniae lanceolatæ, acutæ. FLORIS masculi stamina 5—8, perianthio longiora, inæqualia, erecta. ANTHERÆ carnosæ, ovatae, quadriloculares; loculorum par superius introrsum, inferius lateraliter positum, ita ut antheræ a dorso visæ biloculares videantur; valvulæ lineari-lanceolatæ. GLANDULÆ 2 capitatae ad basin utrinque filamentorum duorum interiorum. PISTILLUM ut in foemineo, sed ovarium absque ovuli rudimento. FLOS foemineus masculo paullo minor. OVARIUM ovatum, villosum, 1-loculare, ovulo pendulo, cylindrico. STYLUS teres, lateraliter parum deflexus; stigma magnum, peltatum, vertice planum. FILAMENTA nuda plura.

This is one of the finest trees in Nipal. Its leaves are large and of an elegant form, covered on the under surface with long extremely fine and soft ferruginous hairs. The wood is considered strong and durable by the inhabitants of Nipal, and as such employed for a variety of carpenters work.

It is with peculiar satisfaction that I feel myself enabled to enrich this work with the following most interesting and learned account of the family to which this tree belongs. It is from the pen of my highly esteemed friend Professor C. G. Nees von Esenbeck, of Breslau, President of the Imperial Academy Naturæ Curiosorum, to whom I take this opportunity of offering my warmest and best acknowledgments.

Plate CLXXVI. Fig. 1. 2. Male flowers. 3. The same, opened. 4. Stamens, viewed from two sides. 5. Anthers, magnified. 6. A fascicle of female flowers. 7. 8. Female flower, detached. 9. The same, opened. 10. Ovary. 11. Ovary, opened.

LAURINÆ INDIE ORIENTALIS.

Exposuit C. G. NEES AB ESENBECK, Prof. Vratisl. Acad. Cæsar. Leopold. Carol. Nat. Cur. Præses.

1. Ordines plantarum, certe qui non arte facti, sed a natura creati, ob summum partium concentum integri videantur et simplices necesse est, ut idem fere sit, genus esse statuas an ordinem.

2. Quæ quidem genera principalia, patribus nostris ab ipsa natura revelata, deinceps aucta formarum singularium et observationum multitudine, animo perfecte comprehenduntur, eoque in omnes partes penetrante ut corpora viva animantur; quod ubi evenit *character* seu *nota* generis in *typum ordinis* evolvitur, scilicet summa partium, et quæ istis inhæreant propriæ dispositiones ac formæ, quantum pateant, quibus limitibus sint comprehensæ, præfiniuntur.

3. Genus, ad gradum ordinis seu familiæ promotum, jam intrinsecus pervestigandum, utrum formarum et partium concentus universalis in partes secedat suis quidem finibus circumscriptas, sed altiore quadam conspiratione junctas, an totus et integer omnium partium quietâ nec usquam interruptâ, evolutione existat.

4. Typi universalis *partes*, animo comprehensæ, *genera* sunt ordinis naturalis; neque ea vero etiam systematis artificialis genera necessario habenda esse, constat; his enim leges naturæ *instinctu*, non humani artificis *manu*, scribuntur. "Generis, ad familiæ gradum promoti, sectiones jam *genera* appellanda sunt."—DeCand. Théor. Elém. p. 220.

5. Ejusmodi genera "distributiones sunt familiarum sive ordinum methodicæ." DeCand. l. c. p. 217. Hæ autem non ad unam partem vel ad paucarum conjunctionem, sed ad universi corporis congruentiam sunt effingendæ. Omnis pars tamen, quæ congruentiam *significat*, tametsi concinnitas ipsa neque in ista sola parte, neque in ulla usquam per se spectata quærenda sit, *characterem* vel sigillatim vel cum aliis conjuncta efficere, vel accedere characteri eumque firmare et illustrare potest. Qui partibus fructificantibus floribusque solis inherere characteres, cum generis non sint *fundamenta*, sed *signa* tantum, levioris sæpe momenti videri, necesse est.

6. Quodcunque autem genus naturale, cum intra familiæ spatium et secundum ejus typum consideretur, vel absque flore et fructu, atque adeo ex qualibet discepta parte, ab observatore gnaro dignoscitur.

7. Exemplo sunt: Proteaceæ, Epacrideæ, Goodenoviæ, cet. *Brownianæ*; Coniferæ *Richardianæ*; Melastomaceæ, Leguminosæ *Candolleianæ*; Umbelliferæ *Kochianæ*; Synanthereæ pleræque *Cassinianæ*; Amarantaceæ et Palmæ *Martianæ*; Gramineæ *Linkianæ*, alia ut taceam.

8. Quo angustiores autem formarum in familia aliqua complexarum fines et numeri, eo fallacior typi *universalis*, omne, ut ita dicam, partium studium supprimentis vel devorantis species, inattento vel inexercitato oculo apparens. Accuratus autem inspicienti partium constituentium notæ inveniuntur, neque revera minus diversa esse generalium ordinum, sed *videri* tantum minus diversa esse cognoscitur.

9. *Laurinarum* ordo e simplicissimis extruitur formis, partiumque distributione simplicissima utitur. Tum ea vero, quæ propria sunt ordini, maximeque insignia, ut v. c. antherarum et staminodiorum conformatio, et intra ordinis fines parum diversa, et, ubi differunt, nec summi ponderis neque satis stabilia.

10. *Truncus* omnium, si *Cassytam* filiformem herbaceamque excipis, lignosus, e stratis concentricis. Tubus medullaris amplus vel mediocris, temporis progressu citius lentiusve exolescens. Fibræ ligneæ rudes, tubis porosis amplis divisæ, pallescentes. Corticis strata vel insipida, vel adstringentia, vel odoris et saporis aromatici, Cinnamomi, Caryophyllorum, Piperis, Camphoræ, vario modo et gradu mixti vel puri, fortioris vel debilioris, dulcedine sæpe admixtâ et mucilaginis. Sapor et odor fœniculaceus *Sassafras* arbori proprius, lignum, nec corticem penetrat. Adulti corticis superficies rimis verticalibus transversalibusque dehiscit palletque; juvenilis punctis lenticellaribus variis inspergitur, viret vel rufescit, glaber est vel pilis rigidulis strigulosus tomentulum construentibus vestitus. Cicatrices

foliorum delapsorum crassæ, reniformes, scutiformes, lunatæ, diu persistunt, situmque foliorum produnt. Ramificatio fit circa apices et ex ipso apice, quam posteriorem innovationem appello. Basis innovationum gemmæ naturam docet cicatricibus squamarum angustioribus, quæ modo confertissimæ quasi annulos efficiunt, modo in spiribus regularibus disponuntur, modo paucissimæ adsunt et parum conspicuæ.

11. *Gemmatio*. Gemmæ vel paucis teguntur squamis, vel pluribus. Illarum squamæ subcoriaceæ sunt et herbaceæ, quasi valvatis oppositæ, carinatæ, apice magis minusve deliscentes; quarum duæ vel quatuor plerumque majores extus solæ in conspectum veniunt, unâ alterâve minore ad basin gemmæ a latere accedente. Pyramidales hæ gemmæ sunt, angulatæ, vel compressæ, neque terminales neque axillares magnitudine admodum præcellentes. Sub foliatione squamæ istæ nonnihil increscunt, subfoliaceâ structurâ præditæ, et post paucas earum jam sequuntur perfectiora folia evidenti transitu. Ex altera parte gemma, quæ multis squamis tecta, perulata dicitur, his gaudet chartaceis vel coriaceis, pluribus spiribus arcte imbricatis, sub foliatione solutis nullâque præviâ evolutione cadentibus; terminales hujusce modi gemmæ majores sunt, ovatæ, oblongæ, lanceolatæ, teretesque, nec angulatæ.

Cassytæ generis gemmæ continuâ fere evolutione dissolvuntur.

12. *Folia* omnium simplicia, integerrima et plurimorum etiam integra, petiolata, coriacea, chartacea, persistentia vel defluentia et mollia, glabra, vel subtus præcipue pubescentia, sericea, tomentosa, glandulis subcutaneis punctulata, in paucis majoribus aliquot glandulis poro pertusis in axillis ramorum retis principalium instructa, nitida vel opaca, subtus sæpe glauca, penninervia, vel palminervia, vel quæ utrisque intercedunt media, triplinervia, reticulo interjecto magis minusve distincto, venulis sæpe arcuatis subparallelis. Dispositio foliorum alterna, ad divergentiam $\frac{2}{3}$, ut Alexandri Brauni verbis* utar, apud plerasque extruitur, ita quidem, ut sextum quodque folium cum primo quoque, quod tibi elegeris, lineâ verticali jungatur. In multis autem singuli ramuli ejusdem evolutionis senis tantum gaudent foliis circa apices magis magisque confertioribus, quæ insequitur gemma apicem occupans. In aliis per paria propius sibi conjunguntur folia, vel etiam opposita aut verticillata proveniunt, ad verticillorum leges tum disposita.

Cassytæ folia abortiva, in squamulis exiguis abeunt.

13. *Inflorescentia* duplicis est generis: umbellulata, vel paniculata. *Umbellulata* e floribus oritur in communis pedunculi apice propriis pedicellis suis nascentibus; qui flores, cum non nisi exiguis pedicellis feruntur, veluti in capitula congeruntur. Involucrum his datum est tetra- hexa- octophyllum, cujus foliola squamis gemmarum foliipararum perfectiorum sunt similia. Proveniunt istæ umbellulæ e foliorum axillis, propriæ gemmæ basi, sæpe brevissimæ, impositæ, quæ basis seu axis gemmæ, cum altius ab origine assurgit, fasciculatæ vel racemosæ dicuntur umbellulæ; paucis singulæ sunt per axillas foliorum umbellulæ, abortu reliquarum residuæ. Ubi pedunculus umbellulæ contrahitur, glomerulus prodit umbellularum; squamæ jam immiscentur gemmæ umbelluliferæ; tum denique, evanescente omni pedunculi communis vestigio, flores singulatim inter gemmæ axillaris squamas emergunt, et ipsa tum vero gemma umbellulæ involucriatæ sessilisque sæpe induit speciem, cui squamæ steriles, modo plures, modo pauciores, ad basin accedunt, seriore autem amplioresque circa flores pro involucro inserviunt. Hæ igitur umbellulæ longe differunt ab illis, quas supra descripsimus, neque floribus unquam gaudent revera ex eodem puncto provenientibus, neque squamæ bracteales plerosque istarum flores deficiunt. Sunt enim istæ, quæ umbellulæ videntur, ortæ ex umbellulis in gemmæ suæ basin demersis solutisque; illæ autem quas supra memoravi, ramulis gemmæ suffultæ

* Ueber die Stellung der Schuppen an den Tannenzapfen.—In Nov. Act. Acad. Cæs. Nat. Cur., Vol. XV. P. I. p. 249 sqq. et p. 266.

elatioresque fasciculi sunt habendi, ulterius non divisi ideoque ramulum seu pedunculum glomerulo umbellari claudentes.

Inflorescentia *paniculata* axillaris nascitur vel e squamæ gemmæ axisque angulo, squamæque delapsâ, nudæ ad innovationum basin tum consociantur paniculæ, vel simul e foliorum superiorum persistentiumque axillis, vel solis ex istis prodit. Dividitur autem talis panicula in ramos, per paria approximatos oppositosve, qui singuli semel bisve furcatim finduntur, interjecto in singula divisione flore intermedio. Deficiente in plerisque flore primæ aut secundæ divisionis medio, ramuli ultimi paniculæ 4 floribus gaudent, addito autem illo sex vel septem. Ubi rami paniculæ magis evolvuntur, ad communis pedunculi typum ipsi accedentes parvæ sunt paniculæ. In debiliore inflorescentia triflora sunt ramuli, solo medio utriusque divisionis flore adhuc superstiti. Magisque autem in compendium redacta omnis inflorescentia ramulum ejusmodi exhibet apice cymuloso-bifidum, 14- 12- 8- 7- 3-florum. In *Cassya* inflorescentiæ axis integer, abjectis ramis, flores fert in spicas redactos.—Bracteolæ parvæ, squamiformes, ad basin ramificationum omnium existunt, sub explanatione inflorescentiæ aufugientes.

14. *Pedicelli proprii* post anthesin magis minusve apicem versus increscunt, tument rigentque, perianthii cum tubo confluentes. Sunt, quorum pedicelli, cum fructus incremento quam maxime incrassati succulentis, coloratis, recti vel incurvi, fructus specie aliena fallant. *Cassytæ* flores sessiles sunt.

15. *Perianthium* e duplici verticillo sepalorum, basi majori minore spatio in tubum connatorum, constat; tubus perstat in omnibus, ubi vero brevissimus est, sub fructu fere evanescit; in aliis autem natura brevior, nec minimus, in discum orbicularem explanatur; in aliis cyathi indurati et incrassati forma cum pedicello incrassato confluit; in aliis, ubi longior, fructum omnino investit claudique, et tunc quidem succulentus carnosusve sub maturitatis tempus inspissatur. Pars libera sepalorum, limbum efficiens, patens aut erecta, sæpe pubescens et intus præcipue sericea, ternis quinisve nervis divisa, glandulis subcutaneis pellucidis punctata, membranacea, chartacea, coriacea, in aliis persistit, non multum quoad consistentiam et magnitudinem immutata; in aliis basi, in aliis medio, vel prope a basi, in aliis infra apicem secundum suturam transversalem post peractam anthesin vel primum natam vel tunc demum apparentem, solvitur caditque: ubi pars aliqua limbi residua cum tubo remanet, hæc mox rigescit et indurata in cupulam a tubo formatam abit, marginem ejus truncatum incisumque efficiens: nonnullis limbus integer durescensque cum tubo suo cupulam regularem lobatam conficit. Paucis limbus ab initio deest, staminibusque tot, quot lacinie deficiunt, vices earum supplentur. Verticilli sepalorum vel binis, vel ternis partibus constant, et divergentia $\frac{1}{2}$ vel $\frac{1}{3}$ * ita se excipiunt, ut secundus verticillus interstitiis primi respondeat. Ubi verticilli disepali se excipiunt, quadrifidum habes perianthium; ubi trisepali, sexfidum. Non desunt autem perianthia 8-fida et 9-fida, sed insolito hæc incremento exoriuntur, neque persistunt.

16. *Stamina* e filamento glabro sæpiusve hirtio, apicem versus dilatato constant, antheram fabricæ singularis valvis sursum adscendentibus dehiscentem, glanduloso-punctatam ferente, de cujus structura confertas excursus nostrum 1, hisce adjectum. *Anthera* est *bilocellata* vel *quadrilocellata*. Antheræ ejusdem floris vel omnes introrsum, seu centrum versus, dehiscunt, vel exteriores tantum, interioribus tribus tum extrorsum, peripheriam versus, spectantibus (quod primus observavit cl. R. Brownius).

Ordo staminum idem est, ac si verticilli binati vel ternati sepalorum verticillos eadem divergentiæ lege excipiant. Respondet exterior staminum verticillus sepalis exterioribus, interior, exteriori interpositus, sepalorum interiorum opponitur verticillo. Stamina hæc, vel quatuor, vel sex, quæ primi et secundi ordinis a me appellantur, primam staminum sectionem exhibent. Sequitur in plerisque altera sectio, simili modo disposita, sepalis staminibusque primæ sectionis immotâ lege divergentiæ congruens, sed cujus secundus verticillus vel e staminibus constat imperfectis (staminodiis) brevioribus, loco

antheræ capitulo solito sagittato, conico, cordatove rariusve clavato præditis, vel ex toto deest. Ubi deest, antheræ primi verticilli hujus sectionis, qui tertius omnium, *introrsum* spectant, ubi adest, *extrorsum* dehiscunt.

Numerus igitur normalis staminum in flore tetrasepalo est 8, in hexasepalo 12; in exemplis tetrasepalis autem, quæ cognita habemus, ordo staminum quartus, seu intimus, non evolvitur, quo fit, ut non nisi hexandras species tetrasepalas invenias. In hexasepalis novem perfecta existunt inter duodecim stamina, stamina quarti ordinis imperfecta sunt staminodia. Deficiente omnino secundâ illâ staminum sectione tetrandri flores et hexandri proveniunt. Deficiente exteriori sectione floris enneandri, triandrum vides forem.

Ubi loco limbi stamina nascuntur in flore hexasepalo enneandro, numerus staminum ad 15 augetur, et in his denique, staminodiis etiam quarti ordinis perfecte explicatis, 18, regulari progressu oriuntur stamina. Quæ hunc numerum excedunt, evolutioni vagæ tribuenda.

17. Adest in omni flore laurino apparatus quidam partium glandulis similium, quæ in plerisque geminæ staminibus tertii ordinis adjectæ, capitulum parvum, compressum, vel angulosum, figuræ variæ, reniformis, cordato-orbiculatae etc., lutei coloris, superficie glabra, exhibent, stipiteque vel magis minusve conspicuo gaudent, vel omni stipite carentes sessiles dicuntur. Quando stipite (qui semper brevis est) fulciuntur, singulo trium staminum tertii ordinis ab utroque latere proxime accedunt, tubi perianthii orificio ordine suo impositæ. Rarior autem hæc occurrit glandularum (quas staminodia geminata appellare placuit) sedes; in plerisque par glandularum filamento staminis hujusce ordinis ad basin, vel supra basin, vel magis superiora versus ultra mediam usque eorum longitudinem inhæret, stipite proprio tum sæpe minimo vel nullo. Quas quidem glandulas cum attentius contempleris, non omnino ejusdem esse ordinis, ac dicta seriei tertiæ stamina, invenies, sed aliquanto magis a centro remoti seu exterioris (quantumvis exiguo spatio) ordinis. Probanter hæc eo, quod glandulæ, etiamsi e latere egredi videantur filamentis, tamen tergo ejus, i. e. extrorsum, incumbant. Neque inter se quidem singuli paris glandulas ejusdem ordinis esse puto, sed diversi et alterni. Vidi etenim, ubi paullo majores sunt hæ glandulæ, unam totam fere a tergo incumbentem filamento, alteram magis a latere ejus positam, introrsum istud amplectentem.

Sex igitur adsunt in flore normali glandulæ geminatae, eaque secundæ staminum sectioni magis exteriora versus subalternoque situ tribuenda. In paucis accedunt nonnullæ aliæ glandulæ secundi vel primi quoque ordinis staminibus, sed istæ tum neque geminatae neque conjunctæ, sed proprii sui ordinis, et intervallis illorum respondentes.

18. Nec stamina esse, neque nectaria hæc corpuscula persuasum est, etsi staminodia improprie dixerim. Stamina non esse probat situs et status imperfectus, quem alium perfectiorem (i. e. stamina tertii ordinis) sequi non interrupto ordine, evolutionis legibus est contrarium. Nectaria non sunt, quoniam nectar non fundunt; tum locus etiam singularis est inter staminum series. Massa e meris cellulis textitur irregularibus, granulis refertis et membrana communi obtectis.

Quæ mihi circa hæc vero propius accedere videantur, exponam. Peracto duplici perianthii staminumque primæ sectionis cyclo, quatuor (bis binis) verticillis complexo, nova quasi exoritur cyclorum series, a perianthio novo incipiens. Hujus autem verticilli, utpote communi ejusdem floris ambitu circumscripti et universali ejus evolutione quasi absorpti, perfici non possunt, nec nisi primis lineis adumbrati cernuntur. Quemadmodum autem in quibusdam, v. c. in *Tetranthera apetala* s. *Roxburghii*, limbi partes in stamina mutata videmus, sic istæ novi limbi lacinie, staminibus diversarum sectionum interjectæ, nec stamina fieri, neque sepala, sed in laminas imperfectas seu staminodia inferioris originis abire necesse est. Magis hæc etiam arrident, si consideramus, novum inversumque in multis posthæc intrare staminum ordinem, cujus bini verticilli, ubi perficiuntur cum limbo illo incompleto alios quatuor verticillos quasi floris interioris exhibent, seu forem imperfecte hexandrum, vel, ubi interior ordo deest, triandrum, qualis solus ex omnibus in *Endiandra* genere Browniano relinquitur.

* Alex. Braun, l. c. p. . .

19. Flos itaque Laurinarum e maxime regularibus est, eademque symmetricâ lege constructus, disepali sint verticilli vel triseptali. Tertius semper primo respondet verticillus, quartus autem secundo. Abortus peripheriam versus ingruit.

20. Vel *hermaphroditi* sunt flores laurini, vel *polygami*, vel *diclini*, et istorum quidem aliis feminei sexus rudimenta in masculo flore concessa sunt, aliis omnino adempta. Femineo flore staminum vestigia nunquam ex integro desunt, restant semper aliqua filamentorum indicia et staminodia geminata. Pistillum, quantum observando assequi potui, simplex, seu ex uno carpello constructum, in omnibus stylo distincto et stigmate latiusculo lobulato instructum. Regulare æquumque videtur carpellum, sed stylus in unum latus semper flexus et stigma obliquum et rhaphe interna defectum præfinitum alterius plurimumve ovariorum ejusdem verticilli produnt*. Unum in permultis, quæ dissecui, inveni ovulum, nec plura; idque a vertice ovarii et parum ad latus conversum pendet, sed trophospermio a basi adscendente alterique parieti pericarpium applicato in hunc locum attollitur, minimeque autem rectâ descendit caditve. Anatropicum est ovulum, at vero inæquali magis extensione partium, quam verâ chazæ ad alteram extremitatem migratione istorum evolutionem non nisi imitari censeo. De his conteras excursum secundum.

21. *Fructus* Laurinarum monospermus est, vel Caryopsis, vel Bacca, vel Drupa† dicendus. Ubi siccioris est naturæ, tubo perianthii includitur vel sicco vel carnosulo. Fructus baccatus aut tubo perianthii totove perianthio in cupulam mutato cingitur, aut eidem in discum, integrum laciniisve appendiculatum converso, insidet, aut perianthio patulo persistente, nec vero incremente, circa basin residuo fulcitur, aut denique nudo omnique fere perianthii vestigio exuto pedunculo, magis minusve incrassato inhæret. Color carnis ruber, violaceus, niger, fuscus.

22. *Seminis* testa membranacea, chartacea, coriacea, cartilaginea, ossea, intus rhaphe ramosâ notata, extus carne fructus inducta; membrana interna tenuis est. Hilum transversale, marginatum, superum (quoad fructum) in parte angustiori seminis, cui exostomii vestigia, formæ papillæ, contigua. Perispermium nullum. Cotyledones vel formæ seminis, semiovatæ, vel bis reflexæ, cavum seminis replentes, peltatæ, i. e. collo embryonis non basi suâ sed supra basin adnatæ, parte petiolarii brevissimâ, lineam transversalem referente. Embryo basi cotyledonum obiectus; radícula supera, in plerisque plumulam bifidam, collo calloso ceu valle ab ipsa discretam, æquans, acuta; rarius plumula multo major et obtusa. Hypogæas esse cotyledones e structura earum conjicio.

Corollaria.

23. Characterem maxime universalem LAURINARUM, omnibusque conformem et immotum exhibent: *Distributio verticillorum floris bis alternans, antheræ valvatæ, glandulæ geminatæ, carpelli et seminis structura*. Hæc sola spectanti unum declarandum est et individuum semper genus: LAURUS.

24. Florem si accuratius penetras, *antheræ* in oculos cadunt aliis omnes introrsum dehiscentes, aliis non ita, sed *tertii ordinis extrorsum*. Habes sane discrimen attentione dignum. Quod si primum eas Laurinas, quarum omnes antheræ introrsum spectant, inter sese comparaveris, hæc invenies: *Deesse his omnibus staminodia illa quarti ordinis*, rariusve eorum loco vera stamina perfici; *inflorescentiam* esse vel *umbellulam* involucrem, vel *gemma* squamam; sexum apud plerasque inter distinctas plantas vel flores distribui.

Tum vero, ad alterum latus conversus, videbis ubicunque tertius staminum ordo retro spectat, *staminodia quarti ordinis vel distincta vel etiam stamina primæ et secundæ seriei una cum his deficientia, inflorescentiam paniculatam* vel e dissoluta panicula *cymulosam* (spicatam in *Cassya*), nec involucrem, sed minutis caducisque bracteolis inspersam, floresque communiter hermaphroditos. Notantur igitur aut determinantur antherarum directione conformi vel oppositâ

* Hæc cum jam scripta essent, cel. Martius per litteras nunciavit, se in Laurinis Brasilianis plura carpella observasse, saltem videri se talia vidisse.

† Excursus II.

simul inflorescentiæ diversæ, sexus diversa distributio; quæ si non spernenda videbuntur, cum floris (partium fructificationis) discrimini alterum vegetationis superioris (inflorescentiæ) discrimen respondeat, cui omnium reliquarum partium concentus quidam facile discernendus adsociatur, duo jam, genera dicas an sectiones, commendabis: TETRANTHERAM et LAURUM (si velis servare nomen); illam ex antheris omnibus centro adversis, hanc ex antheris interioribus reversis dignoscendam.

25. Porro autem *antheras* invenies utriusque harum sectionum aliis esse *bilocellatas*, aliis *quadrilocellatas*. Et ea res quidem, cum pridem a peritis historiæ plantarum viris sit ponderata, neque indigna visa, cujus causâ genera distinguantur, non vili pendenda erit, sed examinanda, maximeque in animum revocandum, quanti sit antherarum hanc in familiam exstruendam vis et quam singulari viâ procreari ipsæ inter Laurinas videantur. Quæras fortasse, numne majoris etiam æstimanda sit hæc locellorum, quam illa, de qua sermo fuit, directionis dehiscentiæ diversitas? Quod si ita esset, Laurinæ omnes, quæ antheris bilocellatis gaudent, pluribus aliis partium tam vegetantium quam procreantium proprietatibus secum magis, quam cum reliquis, conjungi necesse esset. Verumtamen *Cassya* illa, Cuscutam aliquam referens et *Cryptocarya*, cujus fructus tubo perianthii obtegitur, et *Laurus nobilis* Lin., flore quaternario gaudens pluribusque staminibus, et extra has aliæ quoque diversissimæ indolis omniumque inflorescentiæ graduum species, gemmifloræ, umbellifloræ, spicifloræ, paniculatæ cet., ejusdem generis forent habendæ, quibus evidentissime sequitur, maximi inter characteres generum locellorum numerum non esse momenti sed inferioris. In utraque autem, quas jam statuimus, sectione primaria antheras invenimus esse aliis *bilocellatas*, aliis *quadrilocellatas*. Ex his quinque pridem jam exposita referuntur genera maxime naturalia, videlicet LAURUS R. Br., quæ primæ nostræ sectionis, et ENDIANDRA, GYROCARPUS, CASSYTA, CRYPTOCARYA secundæ. Quæ quidem genera non modo ab aliis sui ordinis, sed etiam inter sese differunt maxime: tubi calycis post anthesin evolutione diversâ, cui soli fructus quædam ab universali characterem declinatio consociatur, tum vero laciniarum vel persistentium vel vario modo post anthesin discedentium indole, partium floris numero tam absoluto quam relativo, staminodiorum figurâ, *inflorescentiâ*, in *diversissimis quibusdam generibus diversissimâ*, foliorum aut defectu, aut, ubi adsunt, nervatione et consistentiâ, gemmis denique aut valvatim aut imbricatim squamulatis.

Indicia itaque præbere antherarum locellos (binos quaternosve) generum naturæ convenientium patet, sed ad alia simul esse advertendum quæ si suffragentur, probanda fore genera, si contradicant, relinquenda.

26. His igitur regulis et veluti ducibus in LAURINARUM terra peregrina usus sum omnibusque sedulo ab omni parte iterumque investigatis, plantas hujus ordinis omnes, characterum, quos supra citavi, per gradus invalescentium aut declinantium diverso concentu discedere in plura genera persuasum est tam vegetatione quam fructificatione congrua et ex earundem partium, levi ea quidem primo adpectu, diversitate mox dignoscenda, tametsi habitus universalis et partium foliacearum per omnem ordinem simplicitatem et similitudinem minus atque in aliis plantarum familiis sub oculis cadat.

27. In hac autem sententia maxime confirmatus sum, cum viderem, *eosdem characteres, quos principali illi, ex antherarum conversione hausto, accedentes, Laurinas omnes in duas partes apprimè naturales dirimere supra demonstravimus*, in his etiam, quæ utrisque subjecta sunt, *generibus* dijudicandis *primum locum tenere*, et inter suos quoque limites variatos præcipuam illis notam, tanquam sigillum imprimere, quo reliquæ omnes notæ, in unum collectæ, continentur.

Qui characteres, suo ordine, a superioribus ad inferiora progrediendo, hi sunt:

1. Antheræ bilocellatæ vel quadrilocellatæ.
2. Tubus perianthii fructum investiens aut revelans.
3. Tubi perianthii diversæ peracta anthesi mutationes, et formæ, quibus sub fructu persistens observatur. Fructus maturi substantia ab hisce dependens.
4. Limbi, seu liberæ partis sepalorum, aut integri aut certæ ejusdem

partis, duratio vel ejusdem defluxus, structurâ, i. e. suturâ articulari, præfinitus.

5. Numerus quaternarius vel senarius partium floris.

6. Stamina primæ vel secundæ divisionis abortus, aut completus, aut alterius tantum eorundem ordinis.

7. Staminiodiorum, imprimis geminatorum, frequentia solito major et aliena eorum a typo distributio.

I. Inflorescentia, quantum intra limites sectionis cujusque superiorum variatur. Hæc inter characteres, a vegetatione derivandos, primum tenet locum, et characteribus partium fructificantium 1 et 2 respondet.

II. Gemmatio, quam characteribus floralibus 3 et 4 æqualem duco.

III. Nervatio foliorum, et eorundem in ramis distributio, cum characteribus 5 et 6 partium floralium componendæ.

IV. Folia persistentia vel annuis vicibus cadentia.

28. Quibus præmonitis, tentaminis loco hanc propono Laurinarum ordinis in sua genera distributionem.

LAURINÆ.

Genera Laurinarum in India orientali provenientium, additis sine numero generibus exterarum plagarum affinis.

I. Staminiodia quarti ordinis formæ diversæ et cum staminibus tertiæ seriei alternantia nulla. Antheræ omnes* introrsum dehiscentes. Inflorescentia vel umbellata et subcapitata involucrata, vel primis temporibus gemmaceo-squamata, fasciculata aut racemosa, nusquam conspicue elongata.

A. Antheræ bilocellatæ. (Dioecæ.)

1. *Polyadenia*: Perianthium sexpartitum, deciduum. Stamina 6—9, omnia basi biglandulosa; antheræ ovatæ, breves.

Laurus: Perianthium quadripartitum, deciduum. Stamina duodecim (exteriora 4 limbi laciniis alterna), omnia medio biglandulosa; antheræ oblongæ.

2. *Daphnidium*: Perianthium sexpartitum, basi persistens. Stamina novem, quorum tria interiora basi biglandulosa. Antheræ oblongæ. Bacca fundo floris irregulari explanato insidens.

3. *Benzoïn*: Perianthium sexpartitum, persistens. Stamina novem, glandularum alternis ordinibus intercepta. Antheræ ovatæ. Bacca perianthio persistenti non mutato insidens.—Arbores foliifluæ.

B. Antheræ quadrilocellatæ; (omnes anticæ.)

4. *Dodecadenia*: Hermaphrodita. Perianthium sex- vel novem-partitum. Stamina 12—19, quorum sex interiora basi biglandulosa. Bacca disco floris orbiculari explanato imposita.—Gemmæ unifloræ.

5. *Iozoste*: Dioeca. Perianthium sexfidum, limbo deciduo. Staminiodia floris feminei novem, sagittata.

6. *Tetradenia*: Dioeca. Perianthium quadripartitum, rarius 5—6-partitum. Stamina sex triplici serie, quorum duo vel quatuor utrinque glandulâ stipata. Bacca nuda, pedicello apice incrassato imposita.—Folia triplinervia.

7. *Tetranthera* Jacq.: Dioeca vel polygama. Perianthium sexfidum, rariusve limbo privatum. Stamina 9—15, quorum tria interiora utrinque glandulâ stipata. Bacca tubo floris explanato imposita.—Flores umbellulati vel capitati. Folia venosa.

8. *Cylicodaphne*: Dioeca. Perianthium sexfidum. Stamina duodecim, quorum sex interiora antheris subincompletis inversis basi utrinque glandulâ stipata. Bacca tubo floris cyathiformi integerrimo calyculata.—Inflorescentia præcedentis. Folia venosa.

9. *Actinodaphne*: Dioeca. Perianthium sexfidum. Stamina novem, quorum tria interiora basi biglandulosa. Bacca perianthii tubo cyathiformi innata, laciniarum persistentium residuis appendiculata.—Flores racemosi. Folia verticillata.

Sassafras: Dioecum. Perianthium sexpartitum. Stamina novem, quorum tribus interioribus utrinque glandula crassa, stipitata, libera adjuncta. Bacca pedicelli apici incrassato et perianthii basi residuâ marginato imposita.—Flores racemosi. Arbores foliifluæ.

* *Cylicodaphne* genere demto.

II. Stamina primi et secundi ordinis nulla omnino vel in glandulas mutata. Staminiodia quarti ordinis nulla. Antheræ inversæ.—Inflorescentia paniculata, rariusve subracemosa. Flores hermaphroditi aut polygami.

10. *Endiandra* R. Br.: Stamina tria, libera. Antheræ bilocellatæ. Bacca perianthii tubo truncato immersa.

Misanteca Schlechtend. in litt.: Stamina tria, monadelpha. Bacca perianthio persistente cincta.

III. Staminiodia quarti ordinis tria distincta, formæ a glandularum staminibus adjectarum figurâ diversæ. Antheræ tres interiores ubicunque adsunt, extrorsum, vel saltem (uno in genere) a latere, dehiscentes.—Inflorescentia paniculata vel cymosa, in uno genere spicata.

A. Antheræ unilocellatæ.

11. *Gyrocarpus* Jacq.: Polygamus. Perianthium 4-, 6-, 8-fidum. Stamina et Staminiodia quatuor. Caryopsis perianthio apice bialato inclusa.

12. *Cassyta* Linn.: Perianthium sexfidum, laciniis tribus exterioribus nanis. Nux tecta perianthii tubo incrassato carnoso, laciniis persistentibus coronato.—Flores spicati. Herbæ (vel suffrutices) aphyllæ, volubiles.

13. *Cryptocarya* R. Br.: Perianthium sexfidum æquale, tubo angusto, limbo deciduo. Caryopsis tubo drupaceo clauso perianthii obtecta.—Inflorescentia paniculata.

14. *Beilschmiedia*: Perianthium sexpartitum æquale, laciniis deciduis. Antheræ tres interiores latere dehiscentes. Bacca suberosa perianthii basi orbiculari imposita.—Inflorescentia subracemosa.

B. Antheræ quadrilocellatæ.

15. *Cecidodaphne*: Perianthium subinfundibuliforme, sexfidum, limbo deciduo. Staminiodia interiora capitulo subulato. (Fructus perianthii tubo inclusus?)—Inflorescentia e gemma gallæformi thyrsoidea brevis.

16. *Machilus* Rumph.: Perianthium ad basin sexpartitum. Bacca perianthio immutato persistenti patenti vel reflexo insidens*.—Folia penninervia, venosa.

17. *Ocotea* Aubl.: Perianthium sexfidum. Bacca perianthio persistente, cum limbo in cupulam indurato, calyculata.—Folia penninervia†.

18. *Alseodaphne*: Perianthium sexfidum. Bacca tubo perianthii in discum orbicularem integrum mutato imposita.—Folia penninervia, costata.

19. *Camphora* Bauh.: Perianthium sexfidum. Bacca tubo perianthii cyathiformi, in cupulam truncatam integerrimam indurato, calyculata.—Folia triplinervia apice penninervia. Gemmæ perulatæ.

20. *Cinnamomum* Burm.: Perianthium sexfidum. Bacca tubo perianthii cum basi laciniarum persistente in cupulam cyathiformem truncatam sexfidam indurato calyculata.—Folia trinervia vel penninervia. Gemmæ pauci squamatæ, squamis foliaceis.

EXCURSUS I.

De Laurinarum antheris.

Anthera quadrilocellata revera e duabus constat antheris, seu e locellis quatuor, per paria conjunctivo communi connatis, quorum duo inferiores plerumque majores magisque in medio distantes a tergo paullo ultra locellos superiores adscendunt. Locelli superiores magisque antici et contigui propria membrana gaudent, fineque clauso in locellos inferiores oblique descendunt. In plurimis sutura obliqua a tergo fines utriusque locelli indicat, ubi superior quisque inferiori ab antica parte incumbit duplicemque ibidem producit membranam; paullo magis apicem versus, desinente inferioris locelli laminâ, superioris sola et simplex membrana postica restat. Operculum, seu valvula quam dicunt, anterior locelli est paries, suturâ

* *Persea gratissima* fructus nullo perianthio insidet. Hæc itaque sola (multis ea quidem aliis satis differens,) sui generis species, cui nomen servandum, et reliquis omnibus aliud inveniendum.

† *Ocotea* Gærtn. et Humb. et Kunth diversa genera, *Camphora* generi et *Cylicodaphni* propiora, in India orientali nullis vel paucissimis obscurioribusque pollent civibus.

circumscriptus, nec nisi ubi locelli inter se cohaerent insolubilis. Talis dehiscencia similis esse videtur valvulis siliquae, cujus duo carpella non amplius sutura, sed in media costa solvuntur.

EXCURSUS II.

De ovulo et fructu Laurinarum.

Germen parietibus gaudet crassis, carnosus. Funiculus ad alterum latus ovarii ad apicem adscendens; ovulum pendulum, anatropicum, obovatum, membranâ primâ chartaceâ. Peristomium juxta hilum. Rhaphe in venas eleganter soluta, pallida, latere opposito descendit, chalazam constituens hilo non perfecte oppositam; endostomium superum.

Fructus *maturus*: *bacca*!—vel *nucula*, vel *caryopsis*, calycis eâ tubo indutæ. Hilum superum, margine tenui elevato cinctum, papillâ mediâ carnosâ coronatum, quam funiculus umbilicalis, a basi fructus adscendens*, depressus, latus, sulculo testæ inhærens, cruribus duobus angustis amplectitur. Exostomii papilliformis in semine perfecto nullum ostiolum. Testa chartacea, coriacea, quandoque membranacea et tenuis, pallida, extus opaca, intus nitens, in cujus pariete interiori, lateri, ubi funiculus foris adscendit, opposita, rhapshe in plures ramulos venosos soluta, lata, pallida, ad dimidium fere descendens in chalazam abt amplam circularem, parum ultra extremitatem inferiorem latioreque seminis excurrentem, obliquam igitur et lateralem, lutei coloris; reliqua pars membranæ interioris pallet, loco endostomii, hilo subjecti, maculam magnam chalazoidem orbicularem formans. Embryo cavi seminis figuræ, cotyledonibus crassis intus planis supra basin conjunctus. Radicula et plumula plerisque æquales, conicæ; hæc bifida.

Particularia quædam.

1. In Sectione prima testa tenuior, chartacea, cum membrana interna seminis connata.
2. In *ALSEODAPHNE* testa est tenuior, membrana interna læte fusca, nitida.
3. In *POLYADENIA* rhapshe in venulas paucas soluta, chalazæ vestigia obsoleta, sed umbilicus internus maculâ luteâ notatus.
4. In *DODECADENIA* ovulo funiculus umbilicalis crassus, hilum latum, cui exostomium tumidulum proxime adjectum; rhapshe ad extremitatem oppositam (inversam) adscendens.
5. In *Tetranthera Roxburghii* funiculi umbilicalis adscendentis vestigia non observavi; ovulum et semen a vertice ipso recta pendere videbantur. Rhapshe nulla vestigia; macula chalaziformis umbilici interioris; e regione opposita papilla minuta. An ovulum hujus generis vere orthotropicum?
6. In *Tetranthera sericea* semen mucronatum. Caro baccæ tenuis. Testa seminis crassa, coriacea, alba fibris transversalibus, latere pervia, qua caro nigrescens intrat et parietem internum strato tenui nigrescente (membranâ internâ) investit. Membrana interna sub apice oblique appensa, venâ nigrâ testam permeante.
7. Anatropia ovuli LAURINARUM ejusdem naturæ esse videtur ac anatropia AMENTACEARUM, quæ secundum *Mirbelii* observationes ex orthotropia primaria exoritur, cum vera basis interior ovuli, cui chalaza firmiter inhæret, incremento prævalente producta chalazam, ab hilo dimotam, in partes oppositas vel suboblique aversas abripit. Quæ quidem similitudo, ab observatione § 5. suggesta, si forte examine, in recentiori statu instituendo, omnibus Laurinis communis esse exhibeatur, haud male conveniret Laurinarum naturæ, in universum ad Amentaceas tendenti.

* Argumento hoc est gravissimo, *baccam*, nec drupam appellandum esse fructum Laurinarum, eumque differre tantum testæ seu primi integumentis spissitudine vel tenuitate. Namque ubi spissior est testa, pericarpium nuculam esse arbitrati sunt, et membranam internam pro testa venditavere; quæ si ita se haberent, semen adscendens vel erectum, neque pendulum, esset appellandum, embryo autem intra semen inversus. Contra ea vero ubicunque testa tenerior cum membrana interna magis cohaeret, *baccam* justo nomine fructum appellavere. Gærtnerus fil. in tertio immortalis operis paterni volumine de *Persea*, *Borbonia* cet. agens testam ubique loculamentum vel putamen, membranam internam autem seminis integumentum appellavit.

EXCURSUS III.

Affinitas.

Laurinæ Berberideis proximæ sunt: floris symmetriâ et numero ternario, antherarum dehiscentiâ, carpellorum abortu, relicto uno, plerumque baccante.

Differunt Berberideæ a Laurinis: locello toto antheræ a connectivo secedente, secundo staminum biseriatorum ordine deficiente, glandulis ubi adsunt, cum petalis connatis, seminibus pluribus adscendentibus, albuminosis, embryone; in modo denique toto crescendi, inflorescentiâ, acrimoniâ fructuum, cet.

De similitudine Amentacearum jam sermo fuit. Hæc autem affinitas magis ad fructus et ovuli evolutionem respicit, quam ad universum partium floris concentum vel ad arborum utriusque familiæ indolem generalem.

LAURINÆ INDIE ORIENTALIS.

(Adjectis affinibus aliarum plagarum generibus, non numeratis).

I. POLYADENIA.

(*Tetrantheræ* spp. *Wall.*)

Flores dioeci, involucratæ. Perianthium sexpartitum, laciniis æqualibus deciduis. Stamina fertilia 6—9, omnia circa basin biglandulosa. Antheræ breves, bilocellatæ, introrsum dehiscentes valvulis totidem adscendentibus.—Flos femineus mari similis: staminibus 6—9 sterilibus, quorum 6 basi biglandulosa. Stigma peltatum parvum. Bacca perianthii basi disciformi latâ suffulta.

Inflorescentia: Umbellulæ pedunculatæ, fasciculato-agglomeratæ, vel solitariae. Involucra tetraphylla.—Folia alterna, reticulata, subtus subtomentosa. Gemmæ foliiparæ foliaceo-squamosæ.

Differt a *Lauro* glandulis singulo stamini fertili basi additis, antheris brevibus. Habitus longe distat a *Lauri* naturali indole.—A *Tetranthera* genere præcipue differt antheris bilocellatis—artificiali hoc loco fortasse notâ.

1. *Polyadenia reticulata*; foliis oblongo-cuneiformibus brevicipidatis subtus reticulatis ramulisque ferrugineo-subtomentosis, involucris agglomeratis.—*Tetranthera reticulata* Hamilt., Wall. Cat. n. 2551, A, B.

Crescit in Gualpara (Herb. Hamilt.); in Silhet (Franciscus De Silva). Floret Junio.—Arbor.

Adnot. *Laurus Nacusua* Don Fl. Nepal. p. 64. n. 1. nostræ plurimis convenire videtur, sed differt: 1°. involucris 8-phyllis, quæ in nostra 4-, ad summum 5-phylla; 2°. floribus hermaphroditis, qui nostræ dioeci. An var.?

2. *Polyadenia grandis*; foliis obovatis obtusis subtus reticulatis ramulisque compressis ferrugineo-subtomentosis, involucris agglomeratis.—*Tetranthera grandis*, Wall. Cat. n. 2552.

Crescit in Penang. (Georgius Porter).—Arbor.

Adnot. Planta sane non ex omni parte rite observata, sed ea præcedenti habitu naturali adeo cognata, ut de vera justaque conjunctione nullus dubitem. (Florem femineum non vidi.)

LAURUS.

Flores dioeci vel hermaphroditi, involucratæ. Perianthium quadripartitum, laciniis æqualibus deciduis. Stamina fertilia duodecim triplici serie, quarum exteriora laciniis perianthii alterna: omnia in medio vel supra medium biglandulosa. Antheræ oblongæ bilocellatæ, omnes introrsum dehiscentes, valvulis duabus adscendentibus. Pistilli in masculis rudimentum nullum.—Femineus flos staminibus castratis duobus, basi dilatatis, germen cingentibus? Stigma capitatum. Bacca fundo calycis irregulari insidens.

Inflorescentia: Umbellulæ axillares, pedunculatæ, involucratæ.—Folia alterna. Gemmæ foliiparæ valvulares, squamis herbaceis.

Exemplum unum hujus typi, *Laurus nobilis* Lin., filamentis in medio appendiculatis, appendiculis seu staminodiis reniformibus substipitatis, locellorum inferiorum molimina divulsa nexuque destituta exhibentibus, tum dispositione partium floris aliâ, ternâ ex elementis quaternis, distinguitur, tum etiam gemmis non perulatis.

II. DAPHNIDIUM.

Laurus R. Br., Blume. (Tetrantheræ spp. Wall. Cat.)

Flores dioeci, involucrati. Perianthium sexpartitum, laciniis æqualibus deciduis. Stamina fertilia novem; triplici serie: tria interiora basi biglandulosa; antheræ oblongæ, bilocellatæ, omnes introrsum dehiscentes, valvulis duabus adscendentibus. Pistilli in masculis, staminum in femineis rudimenta. Bacca fundo calycis irregulariter persistenti insidens.—Inflorescentia: flores fasciculati, axillares, ante anthesin squamis gemmaceis tecti, vel umbellati involucrati. Folia alterna, nervosa vel penninervia. Squamæ foliiparæ perulatæ.

Differt a LAURO staminodiis præter ea, quæ basi staminum trium interiorum insident, nullis, et partium floris non solum numero, sed etiam dispositione diversis.

† Foliis nervosis.

1. *Daphnidium melastomaceum*; gemmis florigeris subtrifloris bivalvibus glomeratis, foliis ovali-oblongis obtuse cuspidatis subtus glaucescentibus trinerviis, nervis supra basin confluentibus.—*Tetranthera melastomacea* Wall. Cat. n. 2565. *Laurus cuspidata* Don Fl. Nep. p. 64. ? *Tomex Bolo* Hamilt. Ms.

Crescit in montibus Silhet (Henricus Bruce).—Arbor. Planta ♀ non nota.

Adnot. Si præsumendum esset, cl. Blumium in *Lauro bibracteata* (Bydrag. p. 553.) verbo "[floribus] bibracteatis" gemmæ, quas diximus *valvulas* subintellexisse, dubium non esset, quin nostra planta *Laurus bibracteata* hujus auctoris sit æstimanda. Sed quoniam has ipsas partes in conspectu generum *involucrum* appellavit, conjecturis uti nolebam, bracteasque illas diversas ab involucro partes esse, pedicellis florum impositas, mihi persuadebam.

2. *Daphnidium caudatum*; gemmis florigeris (♀) spiculiformibus, bracteis persistentibus, foliis lanceolatis acuminatissimis trinerviis subtus ramulisque novellis pubescenti-tomentosis canescentibus.—*Tetranthera caudata* Wall. Cat. n. 2866. "*T. melastomaceæ proxima*."

In montibus Silhet inventa est (F. D.).—Frutex?

Adnot. Etiam si flores masculi non sint observati, vix tamen est dubium, quin hujus generis habenda sit arbor, adeo affinis *Daphnidio melastomaceo*, ut, numne ejusdem alter sexus putandus sit, haud immerito quæras.

3. *Daphnidium pulcherrimum*; gemmis florigeris in pedunculo brevi fasciculatis, foliis elliptico-oblongis exquisite cuspidato-caudatis subtus cæsiis subquintuplinerviis.—*Tetranthera pulcherrima* Wall. Cat. n. 2567, A.

In Napalia legit Wallich, anno 1821.—Arbor.

Adnot. Plantæ femineæ ramuli magis sericeo canescunt, folia quoque ejusdem subtus frequentiori lanugine in ætatem usque vestiuntur.

†† Foliis venosis.

4. *Daphnidium bifarium*; gemmis florigeris multifloris geminis, floribus subumbellatis dense conglomeratis, foliis oblongo-lanceolatis utrinque acuminatis subtus ramulisque novellis pubescenti-canis.—*Tetranthera bifaria* Wall. Cat. n. 2530.

Crescit in Napalia (Wallich, 1821.) et in Kamaon (Robertus Blinkworth).—Arbor.

Adnot. *Tetranthera vestita* Wall. in Catal. I. c. notata, juveniles communis speciei ramulos exhibere videtur; nullâ etenim, nisi pubescentiæ evidentioris notâ differt.

5. *Daphnidium oxyphyllum*; umbellulis axillaribus fasciculatis, fasciculis apice innovantibus, foliis oblongis acuminatis basi acutis glabris subtus pallidis.—*Tetranthera oxyphylla* Wall. Cat. n. 2547.

Crescit in Penang (G. P.).—Arbor.

Adnot. DAPHNIDIIS adjudicando hanc speciem optimum elegisse reor in re sane non penitus ad lucem producta, cum dubitari adhuc possit, num antheræ, cursu temporis perfectiores, quaternis denique locellis proditura fuissent. Adsentiente autem modo evolutionis gemmarum florigerarum, donec rectiora doceamur, *Daphnidium* appellare, neque *Tetrantheram*, mecum statui.—Feminam non vidi.

? *Daphnidium elongatum*; umbellulis axillaribus solitariis, foliis lanceolatis subtus reticulatis ramulisque junioribus hirtis.—*Tetranthera elongata* Wall. Cat. n. 2546.

Crescit in Napalia. Lecta anno 1821.—Arbor. Fructus et flores ♂ non noti.

III. BENZOIN.

(Lauri spp. Lin. Tetrantheræ sp. Wall.)

Flores dioeci, involucrati. Flos ♂: Perianthium sexpartitum, laciniis æqualibus persistentibus. Stamina fertilia novem, triplici serie; antheræ ovatae, bilocellatæ, valvulis totidem adscendentibus introrsum dehiscentes. Staminodia novem, triplici serie, capitulo reniformi emarginato compresso, seriei primæ ac secundæ staminibus alterna, tertiæ staminibus adjecta obliqua.—Flos ♀ masculo minor, filamentis sterilibus (12?), interjectis staminodiis spathulatis. Stigma bilobum. Pistillum parvum, germine stigmatique distinctis. Bacca calyci persistenti sexfido insidens.—Inflorescentia umbellata, umbellis pedunculatis. Involucrum tetraphyllum, flores primum includens, demum deciduum. Folia alterna, venosa (ad speciem sæpe quintuplinervia), glabra.—Gemmæ foliiparæ axillares stipitatæ, nudæ.

1. *Benzoïn Neesianum* Wall.; foliis ovatis (cordatisve) longe acuminatis supra læte viridibus subtus glaucis.—*Tetranthera Neesiana* Wall. Cat. n. 2558.

Crescit in Napalia, inventa anno 1821 a Wallichio. Rarissima.

Arbor (fol. 5—7 poll. longis, 2½—4½ poll. latis). Baccæ pipere majores, odore forti Olei Cajuputi.

Ejusdem generis est *Laurus Benzoïn* Lin. (*Benzoïn odoriferum* nob.), et probabiliter *L. diospyroides* Michx et *L. æstivalis* Lin., quæ cunctæ gemmatione, foliorum indole et autumnali defluxu maximeque inflorescentiâ conveniunt. Staminodia geminata in his ita sunt disposita, ut staminibus quidem tribus interioribus gemina adhæreant, alterum vero a tergo, alterum a latere magisque a fronte seu centrum versus filamento incumbant.

IV. DODECADENIA.

(Tetrantheræ sp. Wall.)

Flores hermaphroditi, e gemma squamata solitarii. Perianthium sex-novempartitum, laciniis subæqualibus deciduis. Stamina fertilia duodecim ad quindecim, quadruplici serie disposita, quorum sex vel novem exteriora staminodiis binis capitatis ad basin stipata. Antheræ oblongæ quadrilocellatæ, omnes introrsum versæ valvulisque binis adscendentibus dehiscentes. Stigma infundibuliforme dentatum. Bacca disco floris orbiculari plano imposita.—Inflorescentia gemmiformis, squamis imbricata. Flores pro genere speciosi. Folia penninervia, venosa.

Differt a TETRANTHERA: involucris unifloris, staminum et staminodiorum (in flore metamorphosi non dissoluto, sed inter omnes affines præstantissimo,) numero, stigmatique. Antherarum locellorum par superius introrsum, inferius a latere dehiscit.

Dodecadenia grandiflora.—*Tetranthera grandiflora* Wall. Cat. n. 2544.

Habitat in Napalia (Wallich a. 1821.); in Kamaon R. B. Floret Aprili.—Arbor gemmis florigeris solitariis geminisve, foliis oblongis acuminatis glabris.

V. IOZOSTE*.

(Tetrantheræ sp. Wall.)

Flores dioeci, squamis gemmæ involucrati, sessiles. Perianthium sexfidum, laciniis æqualibus deciduis. Mas . . . Femineæ staminodia novem, sagittata, triplici serie, quorum sex exteriora stipitata subdimidiata, tria interiora majora subsessilia. Stigma dilatatum, lobatum.—Inflorescentia axillaris, sessilis, gemmiformis, aggregata. Folia persistentia, penninervia.

Genus haud rite cognitum, sed staminum steriliū in flore femineo formâ et structurâ satis evidens.

Iozoste rotundifolia.—*Tetranthera rotundifolia* Wall. Cat. n. 2591.

Habitat in China. Vidi exemplum ex Horto Calcuttano.—Frutex foliis ovato-subrotundis subtus glaucis.

Adnot. 1. Species nulli cognitarum arctiori vinculo conjuncta.

Adnot. 2. *Litsæam chinensem* Blume, Bydr. p. 565. eandem puto plantam, foliis paullo longioribus (obovato-oblongis) ludentem.

* i. e. sagittis cincta, ab *ιός* et *ζώνω*.

VI. TETRADENIA.

(Tetranthera spp. Wall. Litsaeae sp. Nees ab Esenb., Blum.)

Flores dioeci. Perianthium quadri-, quinque-, vel sexpartitum laciniis subaequalibus, totis deciduis. ♂: Stamina sex, quorum quatuor vel duo interiora utrinque staminodio stipata. Antherae quadrilocellatae, valvulis totidem ascendentibus introrsum dehiscentes.—♀: Filamenta sterilia quatuor vel sex, apice subincrassata, laciniis perianthii opposita. Staminodia quatuor glanduliformia, sessilia, submucronata, vel germen cingentia per paria approximata, vel, ubi sex filamenta sterilia adsunt, duobus interioribus associata. Stigma discoideum, lacerum. Bacca nuda, pedicello apice incrassato imposita.—Inflorescentia axillaris, fasciculata; gemmae florales sessiles, geminae vel aggregatae, tectae squamis dense imbricatis deciduis, quarum summæ involucales plerumque majores. Folia persistentia, nervata, rariusve costata. Gemmae foliiparae multifariam perulatae.

1. *Tetradenia foliosa*; foliis elliptico oblongis, cuspidate producta obtusa, triplinerviis subtus glaucescentibus ramulisque glabris, gemmis florigeris solitariis geminisve.—*Tetranthera foliosa* Wall. Cat. n. 2563.

Crescit in Silhet. F. D.—Arbor, (similis *Tetradenia umbrosa*).

Adnot. Memorabilis obviam est monstrositas, cujus flores, in gemmas mutati, thyrsum densum obovatum 2—3-pollicarem supradecompositum exhibent, ramis ramulisque gemmulis onustis exiguis, e squamarum patentium solito angustiorum axillis nascentibus. Sub squamulis gemmularum extremarum florum vestigia, licet fere inconspicua, observavi.

2. *Tetradenia umbrosa*; foliis ellipticis cuspidate producta obtusa rariusve acuta triplinerviis subtus concoloribus pallidioribus, ramulis tomentosis.

α. foliis latioribus acumine magis obtuso.—*Tetranthera umbrosa* Wall. Cat. n. 2564. ♀.

β. foliis angustioribus, acumine longiori acutiori.—*Tetranthera pulcherrima* l. c. n. 2567. ex parte. ♀. *Lauri* species Hb. Wight. ♀.

Crescit var. α in montibus Silhet (F. D.); var. β cum exemplo *Tetradenia zeylanica* in eadem scheda Herbarii Wightiani reperi, in Dindygul, alt. ped. 2000, lectam.—Arbor.

Adnot. Var. β, quae fortasse distincta speciei, differt foliis angustioribus, 2½—4 pollices longis, ¾—1¼ poll. latis apicem versus lentius acuminatis ipsoque apice acutis (sed etiam obtusis). Baccæ immaturae pisi magnitudine, disco cupuliformi impositae, in gemmae basi subumbellatae, pedicellis crassis. Reliqua ut in var. α.

3. *Tetradenia furfuracea*; foliis ovato-ellipticis cuspidatis triplinerviis subtus caesio-pruinosis glabris, ramulis novellis subpubescentibus, gemmis florigeris aggregatis globosis.—*Tetranthera furfuracea* Wall. Cat. n. 2568, A, B.

Habitat in Singapur et Penang. Lecta anno 1822 a Wallichio.

Arbor praecedentium habitu, sed foliis inferne pruinâ detergibili caesiâ tectis gemmisque floralibus pluribus in singula axilla conglomeratis primo intuitu distinguenda. Quoad foliorum formam accedit *Tetradenia umbrosa* et *foliosa*, sed differt ab his, jam ubi floribus caret, colore paginae istorum inferioris; a *Tetradenia zeylanica* et *consimili* foliis latioribus diverso modo cuspidatis, gemmarumque florigerarum indole facili negotio distinguitur.—Planta feminea latet, nisi forte ea habenda sit, cujus exempla, in Penang lecta, adsunt, gemmis (an florigeris) parvis, distincte stipitatis, ad speciem solitariis basi nuda, nec totis squamatis, praedita.

4. *Tetradenia zeylanica*; foliis oblongis utrinque attenuatis acumine obtuso, triplinerviis subtus glaucis, costis petiolis ramulisque novellis tenuissime flavescens-sericeis, gemmis florigeris globosis basi contractis.—*Litsaea zeylanica* C. G. Nees ab E. et Fr. Nees ab E. Amœn. Bot. Bonn. Fasc. I. p. 58. tab. 5. Blume Bydr. p. 559. *Tetranthera pulcherrima*? *Lauri* spec. Hb. Wight. e Dindygul. Wall. Cat. n. 2567, C, ex parte. *Dawul Kurundu* Act. Acad. Nat. Cur. Vol. I. App. p. 4. tab. 2. fig. 6. Am. Bot. Bonn. l. c. t. 6. f. 7.; et *Catthe Coronde* l. c. f. 6. Marsh. in Ann. of Philos. 1817, Octobr. p. 243. tab. 71. f. 1. *Laurus zeylanica* flosculus verticillatis folio trinervio, Herm. Mus. Zeyl. p. 26.

Habitat in Zeylonia insula (Herm., Herb. Royen., Marshall). In Dindygul, altit. ped. 2000. (Hb. Wight.)—(Planta feminea latet.)

Differt a *Tetradenia umbrosa* et *foliosa* foliis angustioribus, longioribus subtus laete glaucis; a *Tetr. furfuracea* et *consimili* ramulis sericantibus, ab hac praeterea gemmis florigeris basi abrupte-paucis squamatis, ab illa iisdem gemmis ad summum geminis, nec pluribus conglomeratis, majoribus, foliisque angustioribus.

5. *Tetradenia consimilis*; foliis oblongis acuminatis triplinerviis subtus caesio-albis glabris, petiolis ramulisque novellis scabriusculis, gemmis florigeris geminis ovatis subaequaliter imbricatis.—*Tetranthera pulcherrima*? Wall. Cat. n. 2567, B. *Laurus involucreta* Roxb. Pl. Corom. II. p. 46. tab. 187?

Crescit in Kamaon. R. B.—In montium vertice (Roxb.)? Floret tempore frigido; maturat fructum Aprili (Roxb.)—Arbor habitus praeced. —Femina latet.

Observ. *Tetranthera pallens* Don. Fl. Nep. p. 66. n. 3. hujus speciei femina esse videtur.

Adnot. 1. Species haec ab affinibus colore caesio paginae inferioris distincta facilis. Propius accedit *Tetradenia furfuracea*; haec autem differt foliis brevioribus latioribusque, gemmisque florigeris pluribus aggregatis.

Adnot. 2. *Laurus involucreta* Roxb. l. c. vix dubium est, quin hujus sit loci. Deest inter exempla mihi tradita nomen hujus arboris, nescio quo casu. Haec praecipua fuit causa, ut dubitationis signum adderem. Florum gemmae solitariae et quinqueflorae dicuntur et pinguntur, quae geminatae et 8—10-florae in nostra; sed liceat suspicionem erroris vel negligentiae cujusdam nutrire, propterea quod ramus idem in icone ex altera parte masculinos flores, ex altera fructus immaturos exhibeat, naturâ et verbis auctoris contrariis. Vereor itaque, ne pictor flores masculinos femineo ramulo ex arbitrio suo adjecerit, in exemplo ramuli masculini Roxburghiano vel deficientes vel delapsos; iconem ideo Roxburghianam femineae plantae esse et eo usque fidam, masculinae suspectam, censeo, donec alia edocear. Camphoram olere totam plantam addit Roxburghius, imprimis radicem atque baccas, ad aspectum etiam *Lauro Camforae* Lin. similem esse, 24—30 pedum altitudinem attingere. Baccas maturas non vidit.

6. *Tetradenia lanuginosa*; foliis oblongo-cuneatis acuminatis triplinerviis subtus glaucis floribusque lanuginosis.—*Tetranthera lanuginosa* Wall. Cat. n. 2561.

Crescit in Napalia. (Wallich. a. 1821.)—Arbor (pulehra).

7? *Tetradenia obovata*; foliis oblongis apicem versus paullo latioribus ellipticis acutis crasse penninerviis subtus glaucis costis ramulisque pulverulento-tomentosis, floribus pubescentibus.—*Tetranthera obovata* Hamilt. Wall. Cat. n. 2562, A, B. *Tetranthera Cuipala* Don Fl. Nep. p. 65.? *Laurus obovata*, Hb. Hamilt.

Habitat in Silhet. (F. D. et Hb. Hamilt.)—Arbor. Flos ♀ latet.

Variat: 1, perianthiis sexfidis hexandris, et octofidis dodecandris, staminodiis 8; 2, foliis latioribus magis ellipticis utrinque acutis, ramulis glabris.

VII. TETRANTHERA.

Flores dioeci, nonnullis hermaphroditi, involucrati. Perianthium sexpartitum, laciniis subaequalibus deciduis, vel nullis omnino, vel 3—4—5 tantum iisque parvis petaloideis. Stamina fertilia in flore sexfido novem, triplici serie, rarissime sex, duplici serie, in flore petaloideo vel nudo 12—15, rarius (in femina) 21. Antherae ovatae quadrilocellatae, omnium staminum introrsum valvulis totidem ascendentibus dehiscentes. Staminodia sex, per paria staminibus tribus interioribus adjuncta, sessilia vel stipitata, glanduliformia. Stigma peltatum. Bacca tubo floris explanato, interdum laciniarum residuis praedito, imposita.—Inflorescentia axillaris, aggregata, nuda, vel e squamis gemmae progrediens. Involucrea decidua. Folia varia, paucis subopposita vel verticillata, plerisque alterna, aliis defluentia, aliis sempervirentia, penninervia. Gemmae foliiparae squamis paucis foliaceis.

Genus, metamorphosi perianthii, in stamina progredientis, memorabile, nec vero dividendum, cum transitus pateat, et species omnes,

quas plurimas continet, optime convenient. Conferas, quæ circa hæc sub generis sectione B (I.) animadversa sunt.

A. Foliis suboppositis vel subverticillatis. Floribus hermaphroditis.

1. *Tetranthera lancifolia* Roxb.; perianthiis sexfidis, umbellulis axillaribus fasciculato-conglomeratis brevissime pedunculatis, foliis suboppositis ellipticis cuspidatis subtus incanis, nervis ramulisque ferrugineo-tomentosis, filamentis hirsutis.—*Tetranthera lancifolia* Roxb. Wall. Cat. n. 2532.

Crescit in Sillet (F. D.).—Arbor.

Species inter *Tetrantheras* continentis terræ situ foliorum distinctissima, inter Javanicas *Tetrantheræ* (*Litsaæ*) *ferrugineæ* Blumii proxima, tamen, ex nostra quidem sententia, diversæ.

Adnot. 1. Quoad folia et integumentum ramulorum imprimis convenit cum *T. coriacea*, hæc vero, præter folia nunquam per paria approximata vel opposita, umbellulis quoque differt omnino sessilibus, et floribus paullo majoribus extus totis sericeis subauratis, qui in *T. lancifolia* basi tantum strigoso-hirti, in ambitu limbi autem glabri reperiuntur, tum maxime filamentis glabris.

Adnot. 2. *Tetranthera* (*Litsaæ*) *ferruginea* Blume, quam *Tetrantheram* Blumii appellamus ob priorem "*ferruginea*" nominis Brownianam speciem, differt: foliis multo majoribus, 8—9 pollices longis, 2½ poll. latis (itaque angustioribus), oblongis, acutis vel obtusis, nec acuminatis, basi fere cuneiformibus, subtus densius pubescenti-tomentosis, umbellulis 5-floris. Hanc ita describo:

Tetranthera Blumii; perianthiis sexfidis, umbellulis axillaribus fasciculato-conglomeratis brevissime pedunculatis, foliis suboppositis oblongis acutis basi acuminatis subtus pubescenti-tomentosis canis, nervis ramulisque ferrugineo-tomentosis, filamentis . . .—*Litsaæ ferruginea* Blume Bydr. p. 561. *Cryptocarya ferruginea* Blume Hort. Buitenzorg, p. 65.

Crescit in montanis Javæ v. c. in Salak m. Floret Novembri et Decembri; maturat fructum Januario. *Huru Tankalak* incolis.—Vidi ramum fructigerum. Baccæ agglomeratæ, magnitudine nucis moschatæ, globosæ, cupulæ latæ extus rugoso-exasperatæ lobato-crenatæ insidentes.

2. *Tetranthera angustifolia*; perianthiis sexfidis, umbellulis in parte annotina ramuli fasciculatis nudis, foliis subverticillatis oblongo-lanceolatis cuspidato-acuminatis subtus glaucis glabrescentibus, ramulis petiolisque fulvo-tomentosis.—*Litsaæ angustifolia* Blume Bydr. p. 566. *Tetranthera caduca* Hb. Hamilt. Wall. Cat. n. 2559, A, C. ♂. *Laurus Gullavara* Hb. Hamilt. e Goalpara. Wall. Cat. n. 2559, B. ♀.

Crescit ad Goalpara (Hamilton); in Sillet (H. B.); in sylvis Salak m., Javæ insulæ (Blume). Floret Julio.—Arbor.

Adnot. 1. *Litsaæ glomerata* Blum. Bydr. p. 566, cujus equidem femineum exemplum vidi, nostræ simillima, differt præsertim foliis amplioribus, 8—9 pollices longis, ultra medium 3 poll. latis, obovato-cuneiformibus, cuspidate multo brevioribus instructis, subtus distincte albido-tomentosis, in costis autem ramulisque ferrugineo-tomentosis floribus magis albicanti-tomentosis. An varietas nostræ? Etiam *Litsaæ macrophylla* Blumii fortasse cum hac nostra in unam speciem consociari potest; de planta autem, a me non visa, judicare nefas duco.

Adnot. 2. Planta feminea, quam supra citavimus, differre videtur a mascula: ramis laxioribus magis tomentosis, foliisque tenuioribus magis lanuginosis, tum floribus minoribus.

B. Foliis alternis. Floribus dioecis. (*Genuina*.)

a. Foliis sempervirentibus.

(I.) Flores apetalis vel subapetalis, scilicet limbo vel toto in stamina converso, vel, ubi laciniae evolvuntur, his angustis teneris basi angustioribus numero inconstante.—Inflorescentia: umbellulæ vel solitariae vel subumbellatæ.—SEBIFERA Lour. BERRY Klein.

Adnot. Ab omnibus hujus (*Tetrantheræ*) generis sectionibus, quin cunctis Laurinis, differunt hæc species limbi perianthii defectu, seu potius evidentissimo laciniarum ejus transitu in stamina, quæ, ubi rursus petaloidea inveniuntur, ternario inconstante numero adsunt.

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distantia, minora et tenuiora, basi angustiora, apice sæpe denticulata*.)

α. Umbellulæ solitariae.

3. *Tetranthera tomentosa* Roxb.; floribus apetalis, umbellulis axillaribus solitariis pedunculatis, foliis elliptico-oblongis utrinque acutiusculis subtus petiolis ramulisque cano-tomentosis.—*Tetranthera tomentosa* Roxb. Wall. Cat. n. 2550, A, B, C, D. *Litsaæ tomentosa* Hb. Heyn. *T. japonica* ♀ Hb. Wight.

Crescit in Sirmore (Kamrup).—Arbor.

Adnot. A *Tetranthera ligustrina* limbi perianthii defectu, foliisque acutis, diversa.

4. *Tetranthera ligustrina*; floribus subapetalis, umbellulis axillaribus solitariis pedunculatis, foliis lanceolatis obtusis venoso-reticulatis glabris lucidis.—*Tetranthera laurifolia* Wall. Cat. n. 2555, C et E. *Litsaæ chinensis* Hb. Heyn. *Tomicis* sp. Hb. Wight.—*Tomea Sebifera* Willd. Sp. Pl. II. 2. p. 840, in descriptione, partim, præsertim quod ad folia oblongo-lanceolata obtusa cet. attinet.

Vidi exempla ex herbariis Heyneano et Wightiano, patriâ non indicatâ.—Arbor. Fructificatio feminea latet.

Adnot. Species hæc a confinis foliorum formâ et umbellulis solitariis lateralibus facile distinguenda.

β. Umbellulæ subumbellatæ.

5. *Tetranthera Roxburghii*; apetalâ, staminibus quindecim antherigeris, foliis ovato-oblongis basi acutis glabris, umbellulis subumbellatis.—*Litsaæ sebifera* Pers. Syn. II. p. 4. n. 8. *Tomea Sebifera* Willd. Sp. Pl. II. 2. p. 840. n. 3. *Laurus involocrata* Retz. Obs. 6. p. 27. *Tetranthera apetalâ* Gærtn. de Fruct. III. p. 225. t. 222. f. 2.

Variat: α. foliis ovatis apice angustioribus, umbellulis longe pedunculatis.—*Tetranthera apetalâ* Roxb. Pl. Coromand. II. p. 26. t. 147. *T. apetalâ* Hb. Roxb. Wall. Cat. n. 2554, A (ex parte ♀), C (ex parte ♂), D, E, G (♂). *Litsaæ apetalâ* Pers. Syn. II. p. 4. *T. citrifolia* Juss., Spreng. Syst. Veg. II. p. 266. n. 3. *T. Panshia* et *T. Daradmeda* Hb. Hamilt. Wall. I. c.

β. foliis oblongis obovatove-oblongis basi cuneiformibus obtusis obtusissimis, umbellulis longius pedunculatis.—*Tetranthera apetalâ* Wall. Cat. n. 2554, A (ex parte ♂), H (♂), I (♂) ex parte. *Tetranthera sebifera* Herb. Heyn. (ex parte).

γ. umbellulis brevi-pedunculatis, in pedunculo communi subcapitatis, floribus minoribus, foliis obtusis acutisve.—*Tetranthera apetalâ* Wall. Cat. I. c. B, C (ex parte ♀), F (ex parte). *T. capitata* Hb. Roxb. Wall. Cat. C. *T. sebifera* Hb. Heyn. *T. Hirana* Hb. Hamilt. e Gongachara (quoad folium). *Laurus involocrata* Hb. Madr. Wall. I. c. B.

Variat deinde ramulis junioribus petiolisque modo hirsutis (hujus loci *Tetranthera Panshia* Hb. Hamilt. ♂), modo glabriusculis, pedunculis umbellularum masculinarum nunc pedunculo communi longioribus, nunc (rarius tamen in α et β, semper in γ) brevioribus.

Arbor mediocris (polymorpha) in montibus provinciarum *Circars*

* Genus SEBIFERA, a Loureiro optime expositum est, dum supponas, involucrum ab eodem pro perianthio acceptum esse, quo sequitur, pedicellos 8—10, filamentis nudis nec perianthio vero cinctis coronatos, tot "filamentorum adelphicorum fasciculos" fuisse declarandos; florem (sic dictum) femineum autem, "decagynum", neglectis scilicet filamentis in ambitu pistilli sterilibus. Quod si genus hoc servandum esse censeas, his notis, repugnante tamen affinitate ac dispositione partium, circumscribi posset:

SEBIFERA Lour. BERRY Klein. Flores dioeci, involucrati. Perianthii limbus in stamina conversus, quorum tria exteriora quandoque sterilia petaloidea. Mas: Stamina antherigera quindecim, quintuplici serie, quorum tria interiora basi staminodiis binis capitatis stipata. Antheræ ovatae, quadrilobellatæ, valvulis totidem sursum reflexis dehiscences. Femina: Filamenta sterilia, apice lanceolata mucronata glandulosa, 15, quintuplici, vel rarius 21, septuplici serie, quorum tria exteriora petaliformia. Staminodia ut in mare. Stylus elongatus. Stigma oblique dilatatum, dentatum. Bacca monosperma, fundo calycis persistenti truncato integro demum disciformi insidens; nucleus chartaceus.—Inflorescentia: Umbellæ involocratæ, in pedunculo communi corymbosæ, axillares. Folia alterna, persistentia, penninervia.

Notandum tamen, SEBIFERÆ genus Loureirii, seu TOMICEM Willdenowii, genuinum continere typum TETRANTHERÆ Jacquinii.

dictarum (Roxburgh). Floret Junio. Vidi exemplum varietatis α in Hb. Roxb. (δ); in Hb. Wightiano; e Goalpara, et e montibus provinciae Monghir in Herb. Hamilt. (δ); e Chittagong a Henr. Bruce lecta (?): varietatis β in Hb. Roxb. (δ); e Sillet δ et γ (F. D.); in Hb. Heyneano: varietatis γ in Hb. Wightiano (?), in Herb. Madrasp. (?), et e Gongachara.—Floret Junio.

Nomen in lingua Telingana, *Narra Alaghij*.

Adnot. 1. Varietates α et β nullis omnino finibus tenentur. In hac umbellulæ (etiam masculinæ) sæpius a breviori pedunculo feruntur; in var. γ umbellæ semper sunt brevi-pedunculatæ, atque in femina stamina exteriora pleraque subulata absque laminæ vestigio; occurrunt vero promiscua alia cum laminæ rudimento, nec desunt inter hæc, quæ communi formæ omnino respondeant. Folia acuta in solis varietatibus α et γ observavi.

Adnot. 2. De synonyma *Sebifera glutinosa* Lour. vix dubia remanent. Quomodo enim, si *Tetrantheram monopetalam* Roxb. ante oculos habuisset, perianthium non vidisset, involucrum tetraphyllum 8—10-florum disertis verbis indicavisset? Willdenowii descriptio, l. c. exhibita, omnem nodum solvit. Descriptio partium fructificationis, e Kleinii litteris excerpta, quam eodem loco legimus, plantæ feminæ est eique apprime accommodata.—*Tetrantheram glutinosam* Blumii hujus loci non esse ex eo conjicio, quod florum structuram alienam ne verbo quidem attigerit auctor, hac in re accuratissimus.

Adnot. 3. *Tetranthera Hirana* Hb. Hamilt., e Nuni allata (Wall. Cat. n. 2554, F.) ex altera parte non est hujus loci. Adsunt sola folia, 7 pollices longa, 3 poll. lata, elliptica, utrinque obtusa, subtus pubescenti-tomentosa, pallide ferruginea, quæ *Tetrantheræ macrophyllæ* Hb. Hamilt., n. 2549, adscribenda sunt.

Adnot. 4. Glandulas 6—16 memorat Roxburghius. Equidem in multis, quos dissecui, floribus non ultra 8, quaternis paribus, offendi. Lubenter autem crederem, ubi 21 stamina sunt, quinos ordines, his geminatis præditos, 15 numero monstrare glandulas. In flore staminibus 15 instructo staminodia semper sena, in flore 16 staminibus gaudente octona inveni.

6. *Tetranthera laurifolia* Jacq.; laciniis perianthii 3—6 parvis petaloideis, foliis oblongo-cuneiformibus obtusis glaucescentibus, umbellulis subumbellatis.—*Tetranthera laurifolia* Jacq. Hort. Schœnbr. I. p. 59. t. 113. Spreng. Syst. Veg. II. p. 266. n. 1. (excl. synonym. *Sebifera glutinosa* Lour.). Wall. Cat. n. 2555, A. *T. apetala* Wall. Cat. n. 2554. I. (ex parte). *T. sebifera* Hb. Heyn. (ex parte). *Tomeæ Tetranthera* Willd. Sp. Pl. II. 2. p. 839. n. 2. *Litsaea Tetranthera* Pers. Syn. II. p. 4. n. 2. *Litsaea obtusa* Blume Bydr. p. 564?

Habitat in China (Jacquin). Vidi exemplum ex Horto bot. Calcutt. et ex Hb. Heyn. Arbor specie præcedentis, præcipue varietatis β , sed satis sibi constans. Florem femineum non vidi. Baccam magnitudine pisi majoris saturate rubram (fortasse immaturam?) exhibet Jacquinus l. c.

Adnot. Icon Jacquini plantam juniorem pingit, foliis, ut in caldariis nostris fieri solet, paullo majoribus mollioribusque præditam, sed revera exemplis horti Calcuttensis mirifice consentaneam.

(II.) Perianthium distincte sexfidum, laciniis (in flore masculino saltem) basi non angustioribus, firmioribusque.

α Umbellulæ fasciculatæ, ob pedunculos nullos vel breves subglomeratæ. (*Glomeratæ*.)

7. *Tetranthera coriacea* Heyn. Hb.; perianthio sexfido, umbellulis axillaribus sessilibus conglomeratis, foliis alternis ellipticis breviusculatis subtus ramulisque subtilissime tomentosis incanis, filamentis glabris.—*Tetranthera coriacea* Herb. Heyn., Wall. Cat. n. 2556. *T. myristicæfolia* Wall. Cat. n. 2548, ex parte? (e Penang, G. P.)

Crescit . . . Vidi exempla arboris masculæ, ea autem non bene servata, ex Herb. Heyneano.

Adnot. Species hæc, ob defectum alterius sexus incertioris sedis, ad DODECADENIAM et CYLICODAPHNEN accedit, sed habitu et inflorescentiâ umbellulatâ (tametsi sessiles sint umbellulæ) genuinis TETRANTHERIS ante omnes confinis esse videbatur.

8. *Tetranthera monopetala* Roxb.; perianthio sexfido, umbellulis axillaribus fasciculatis, foliis alternis ovato-ellipticis obtuse cuspidulatis subtus ramulisque incano-tomentosis.—*Tetranthera monopetala*

Roxb. Pl. Corom. II. p. 26. t. 148. Roxb. Herb. *T. macrophylla* Wall. Cat. n. 2549, A—G. *T. laurifolia* Wall. Cat. n. 2555, B. *T. reticulata fruticosa* Herb. Hamilt. *T. Hirana* Hb. Hamilt. ex parte.

Variat.: α . Umbellulis ob pedunculos abbreviatis in gemmæ basi subagglomeratis. Hujus loci exempla sunt *Catalogi Wallichiani* n. 2549, D, in regno Oude lecta.

β . Umbellulis paucioribus in fasciculo, sæpe etiam minoribus. Hujus loci exempla Herbarii Roxburghiani, et ea, quæ in Herbario Hamiltoniano nomine *Tetrantheræ reticulatæ fruticosæ* exstant, Wall. Cat. n. 2555, B, et 2549, G, δ et γ , atque ea quæ in Penang lecta sunt, Wall. Cat. 2549, F, δ , et quæ in Napalia legit Wallichius, l. c. E, δ .

γ . Umbellulis pluribus in fasciculo majoribusque. Wall. Cat. n. 2549, C, e Chittagong δ . His maxime respondet figura Roxburghii, supra citata.

δ . Gemmis quasi proliferis, hinc umbellulis in pedunculo communi pollicari altiorive veluti paniculato-glomerulatis, in pluribus fasciculis dispositis, aliis ad basin communis pedunculi glomerato-fasciculatis.

Arbor mediocris vallium concavitates amans, tempore calido florens (Roxb.). Vidi exemplum Herbarii Roxburghiani, Roxburghii propriâ manu inscriptum; tum alia multa, sub *T. macrophyllæ* nomine missa, e Sillet (F. D. et Hort. b. Calcutt.), e Chittagong (H. B.), ex Oude (Wallich 1825.), e Napalia (idem, 1821.), e Penang (idem, 1822.), e Habora et Budlegunj (Hamilt.), e Nuni (idem).—Floret Martio.

Cum *T. laurifolia* Jacq. nullo vinculo arctius connectitur; propius autem accedit ad *Tetrantheras japonicam* et *coriaceam*, quarum posterior umbellulis sessilibus differt, foliisque basi acutis subtusque minus tomentosis; prior autem involuclis maxime caducis, aliisque notis.

Adnot. 1. An vere distincta a *Tetranthera japonica*?

Adnot. 2. An genus proprium, ob staminodia, ut in Polyadeniis, omnibus pluribusve saltem staminibus consociata?

9. *Tetranthera glauca* Wall.; perianthio sexfido hexandro, umbellulis axillaribus glomerato-fasciculatis, foliis elliptico-oblongis acumine obtusiusculo supra glabris nitidis subtus glaucis, petiolis ramulisque tenuissime tomentosis incanis, filamentis villosis.—*Tetranthera glauca* Wall. Cat. n. 2533.

Habitat in Sillet (F. D.)—Arbor.

Integumento ramorum cano, e strigulis minutissimis adpressis, foliorum quoque paginæ inferiori inspersis, conflato, umbellulisque parvis circa foliorum axillas veluti glomeratis ad *Tetrantheras salicifoliam* et *attenuatam* accedit, sed satis diversa foliis majoribus subtus glaucis quasi pruinosis et floribus minoribus hexandris.

10. *Tetranthera attenuata* Wall.; perianthio sexfido, umbellulis axillaribus fasciculatis confertis, foliis lanceolatis oblongisve acuminatis obtusiusculisve supra lucidis subtus ramulisque angulatis apice strigoso-subsericeis canescentibus, filamentis villosis.

? α . foliis lanceolatis.—*Tetranthera salicifolia* Hb. Roxb., Wall. Cat. n. 2536, a. (ex parte ?.)

β . foliis latioribus oblongis.—*Tetranthera attenuata* Wall. Cat. n. 2534. (ex parte). *Tetranthera laurifolia* Roxb. (nec Jacq.) ex Hb. Hamilt., Wall. Cat. n. 2535.

Crescit in Sillet (F. D.) Vidi et exempla Herbariorum Roxburghiani et Hamiltoniani.

Adnot. *Tetrantheræ salicifolia* adeo est similis, ut, sitne varietas an species distincta, vix dijudices, præsertim cum formæ varietatis β quæ sane plurimum differre videantur a *T. salicifolia*, in eodem ramulo obviæ, speciem ad amussim referant varietatis β *salicifolia*, eoque genuinæ *Tetrantheræ salicifolia* conjungantur.

11. *Tetranthera salicifolia* Roxb.; perianthio sexfido, umbellulis axillaribus fasciculatis confertis, foliis lanceolatis oblongisve, plerisque obtusis, opacis, subtus ramulisque angulatis strigoso-sericeis griseis, filamentis villosis.

α . foliis lanceolatis.—*Tetranthera salicifolia* Roxb. Herb. δ . Wall. Cat. n. 2536, A ex parte, B, C. Hamilt. Herb.

β . foliis oblongis.—*Tetranthera laurifolia* Herb. Hamilt. γ . *T. Diglotia* Herb. Hamilt. δ . *T. attenuata* Wall. Cat. n. 2543 ex parte.

Vidi exempla varietatis α δ in Herb. Roxburghiano; deinde in

Herb. Hamiltoniano, in Kichakgur lecta, ♀. Varietatis β marem in Nakiswari, feminam in Kaldutea legit Hamilton; in Sillet F. D. invenit marem. Floret Januario—Aprili.—Arbor.

Adnot. 1. Hæc quidem species satis insignis ramulis sulcatis griseis et umbellis parvis in foliorum axillis quasi agglomeratis. Quoad *Tetrantheræ attenuatæ* affinitatem istum conferas titulum.

Adnot. 2. In Herbario Roxburghii nomine *T. salicifoliæ* inscriptæ duæ latent diversæ species. Mas etenim hujus est, quam *salicifoliam* diximus, femina vero ad *Tetrantheram laurifoliam* Roxburghii (non Jacq.) seu *T. attenuatam* Wallichii (i. e. spec. præcedentem) referenda.

β. Umbellulæ subsolitariae, pedunculatæ.

12. *Tetranthera saligna*; perianthio sexfido, umbellulis axillaribus subsolitariis, foliis lanceolatis utrinque acutis glabris supra lucidis, filamentis villosis.—*Tetranthera angustifolia* Wall. Cat. n. 2537.*

Crescit in Sillet (F. D.).—Frutex? Femina non est nota.

Adnot. Species hæc ex habitu saligno, foliis fere Salicis albæ, umbellulisque parvis sparsis solitariis inter omnes facilis distinctu.

γ. Umbellulæ fasciculatæ, pedunculis propriis communi umbellularum pedunculo, e basi gemmæ orto, multo longioribus. (*Polyanthæ*.)

13. *Tetranthera polyantha* Wall.; perianthio sexfido, umbellulis axillaribus fasciculatis longe pedunculatis crebris, foliis oblongo-lanceolatis acuminatis glabris membranaceis supra lucidis, filamentis villosis.—*Tetranthera polyantha* Wall. Cat. n. 2538.

Crescit in Sillet (F. D.).—Frutex. Flos femineus latet. Species elegans, habitu saligno, florum ubertate, foliorum nitore, ramulorum gracilium comâ, odore, commendabilis.

14. *Tetranthera chartacea* Wall.; perianthio sexfido, umbellulis axillaribus longe pedunculatis fasciculatis, foliis elliptico-oblongis utrinque acutis glabris membranaceo-chartaceis, ramulis novellis strigoso-subtomentosis, filamentis (floris ♀) strigulosis.—*Tetranthera chartacea* Wall. Cat. n. 2531.

Crescit in Napalia.—Frutex (?). Mascula planta ignota.

Adnot. 1. *Tetrantheris coriaceæ* et *myristicifoliæ* affinis, notis tamen characteristicis expositis facili negotio distinguenda.

Adnot. 2. Flores, aquâ calidâ emolli, cum ex ea trahantur chartæque emporitæ imponantur, citissime siccescentes rigescunt simulque pulvere albicante granuloso veluti pruinâ, præsertim in pedunculo, staminibus pistilloque, inducuntur.

15. *Tetranthera lata* Wall.; perianthio sexfido, umbellulis capituliformibus axillaribus fasciculatis longe pedunculatis crebris, foliis oblongis utrinque acutis glabris subtus cæcio-albidis, filamentis villosis.—*Tetranthera lata* Wall. Cat. n. 2541.

Crescit in Sillet (F. D.).—Arbor (pulchra). Femina ignota.

Adnot. Similis *Tetrantheræ oblongæ*, sed differt abunde: foliis subtus læte cæcio-pallidis, florum copiâ, fasciculisque horum sessilibus neque pedunculo communi suffultis, pedunculis tenuioribus, umbellulis minoribus, floribus majoribus, staminibus longioribus.

δ. Umbellulæ corymbosæ, pedunculis propriis communem umbellularum pedunculum subæquantibus, vel hoc saltem distincto, ultra gemmæ basin producto.

16. *Tetranthera oblonga* Wall.; perianthio sexfido, umbellulis capituliformibus axillaribus subcorymbosis, foliis oblongo-lanceolatis utrinque acutis glabris subtus glaucescentibus, filamentis lanuginosis.—*Tetranthera oblonga* Wall. Cat. n. 2542. *Tetranthera Doshia* Don Fl. Nep. p. 65. *Tomex Doshia* Hamilt. Ms.

Habitat in Napalia, lecta a. 1821 a Wallichio. ♂ ♀. Ad Narainhetty, Napalensium (Hamilt.). Floret Novembri (Don l. c.).—Arbor.

Adnot. Hermaphroditos, seu polygamos, flores existimares, ob pistillum in antherigeris solito magis evolutum. At femina, staminibus castratis instructa, sola fructum edere videtur.

17. *Tetranthera myristicifolia* Wall.; perianthio sexfido, umbellulis axillaribus fasciculato-corymbosis, foliis oblongis basi cuneiformibus glabris glaucis, filamentis glabris.—*Tetranthera myristicifolia*, Wall. Cat. n. 2548 ex parte.

* Nomen mutandum erat ob *Litsacæ angustifoliam* Blumii tempore priorem.

Crescit in Penang. Legit G. P.—Feminea planta latet. Arbor, habitu quidem *Tetrantheræ oblongæ* accedens, sed satis distincta: foliis basi, nec apice, attenuatis, rigidioribus glaucis subtus pallidioribus, et perianthio cum filamentis glabris, nec lanuginosis. A *T. coriacea*, cujus ramulus adjectus erat nostræ, non minus distare videtur ramulis glabris, foliis basi longe attenuatis subtus glaucis, petiolis profunde canaliculatis, umbellulis masculis (quas solas vidi) pedunculatis et in communi pedunculo subcorymbosis aut fasciculatis, perianthio denique, nec solis filamentis, glabris.

18. *Tetranthera nitida* Roxb.; perianthio sexfido, umbellulis axillaribus racemoso-corymbosis, foliis elliptico-oblongo-cuneiformibus obtusis glabris concoloribus, filamentis strigosis, ramulis acutangulis.—*Tetranthera nitida* Roxb. Wall. Cat. n. 2540, A et B. *Tetranthera Baula* Herb. Hamilt.

Habitat in Sillet (F. D.); in Gualpara (Hamilton).—Arbor. Flores femineos non vidi.

Adnot. 1. Inter congeneres ramulis maxime arguteque angulatis distinctissima. Quoad inflorescentiam *Tetrantheræ glabrata* conjunctior quidem, sed totâ fere reliquâ diagnosi discedit.

Adnot. 2. Inter species Javanicas huic comparandæ sunt *Tetranthera (Litsacæ) resinosa* Bl. et *angulata* Bl., quarum prior sane similima, videtur tamen differre ramulis obtuse angulatis, et involucris fasciculatis 5—6-phyllis, nec racemosis tetraphyllis. *Litsacæ angulata* Bl. ramulis quidem argute angulatis nostram refert, differt autem ab hac foliis acutis subtusque glaucis.

Adnot. 3. Flos intermedius umbellulæ, seu capituli 5-flori sæpe quadridus est, staminibus octo totidemque staminodiis.

ε. Umbellulæ distincte racemosæ.

19. *Tetranthera glabrata* Wall.; perianthio sexfido, umbellulis axillaribus racemosis, racemis paucifloris, foliis oblongo-lanceolatis utrinque acutis glabris supra glaucis, filamentis lanuginosis.—*Tetranthera glabrata* Wall. Cat. n. 2543. *T. salicifolia* Herb. Wight.

In montibus regionis Dindygul, elev. 3000 ped. legit Wightius.—Arbor (?).

Adnot. Inter affines proxima sane videtur *Tetranthera myristicifolia*; sed facile dignoscitur *T. glabrata* ab ista foliorum formâ, umbellulis racemosis floribusque duplo majoribus dense sericeis, filamentis villosis, staminum steriliū quarti ordinis serie, aliisque notis.—♀ latet.

20. *Tetranthera Panamanja* Hamilt. Hb.; perianthio sexfido, umbellulis axillaribus lateralibusque racemosis, racemis multifloris petiolo longioribus, foliis oblongis utrinque acuminatis glabris, filamentis exterioribus strigosis.—*Tetranthera Panamanja* Hb. Hamilt. Wall. Cat. n. 2553, A, B.

Crescit in Gualpara (Hamilton). Floret Julio.—Arbor (speciosa).

Adnot. Species hæc a reliquis omnibus, præter *T. glabrata*, dispositione umbellularum racemosâ, in pedunculis communibus quam pro genere longioribus, distincta, tum vero et staminodiis floris feminei filamentis 6 interioribus parallelis lateraliter in medio adfixis, nec stipitatis.

ζ. Foliis deciduis.

21. ? *Tetranthera sericea* Wall.; floribus præcocibus, umbellulis infra ramulorum apices alternis approximatis, foliis annuis oblongis utrinque acuminatis venosis pedicellisque villosis.—*Tetranthera sericea* Wall. Cat. n. 2545, A, B.—A: femina, fructu foliisque ornata. B: ♂ et ♀ cum floribus absque foliis.

Habitat in Napaliæ, monte Sheopur. Floret Aprili. Lecta a. 1821 a Wallichio.—Frutex.

Adnot. Genus fortasse distinctum. Antheræ emarginatæ, stamina floris ♀ sex laminigera, gemmatio, folia decidua, distinguunt.

VIII. CYLICODAPHNE.

(*Tetrantheræ* sp. Wall.—*Borbonia Plum.*, *Gærtn.* ex parte (?).)

Flores dioeci, involucrati. Perianthium sexfidum (rarò octofidum) laciniis subæqualibus deciduis. ♂: Stamina antherigera duodecim

* *Borbonia* Plum. et *Borbonia cupularis* Lam. *Gærtn.* de Fr. et Sem. III. p. 225. t. 222. f. 1. vel hujus loci habendæ, vel ad *Camphoræ* genus referendæ.

(in flore octofido sedecim), quadruplici serie disposita, quorum sex exteriora perfecta, basi nuda, sex interiora breviora antheris imperfectioribus, basi staminodiis subgeminis capitatis compressis stipata. Antheræ quadrilocellatæ, staminum interiorum inversorum! abortu etiam bilocellatæ, ovatæ, mucronatæ, valvulis tot quot locellis gaudent, sursum reflexis, dehiscentes. Pistilli vestigia in masculo flore nulla omnino. Bacca tubo perianthii cyathiformi truncato integro semiimmersa.—Inflorescentia umbellata, umbellulis involucriis racemosis. Folia penninervia, crassa.

Adnot. Stamina 6 interiora exterioribus dimidio minora sunt. Horum tria exteriora utrinque, vel uno saltem latere, prædita sunt staminodio squamiformi brevissime stipitato laterali magisque a tergo posito, interdum etiam geminis. Intima tria filamenta perbrevis instructa, antheris gaudent unilocellatis vel quadrilocellatis, locellis magis extrorsum versis. Staminodia gemina his opposita cordato-orbiculata. Interdum loco paris staminodiorum uno staminodio formæ solitæ adstat stamen veluti dimidiatum, antherâ parvâ unilocellatâ, acceditque ejus filamentum ex eodem latere squamula formæ staminodii.

A DODECADENIA differt præsertim fructu glandiformi et inflorescentiâ. A plerisque autem Laurinis tetrantheris deficiente vel levissimo femineæ partis in masculo flore vestigio distinguitur.

Etymologia: *κύλη*, *calyx*, et *δάφνη*, *laurus*, ob formam cupulæ calycinæ fructus.

Cylicodaphne Wightiana.—*Tetranthera Wightiana* Wall. Cat. n. 2557, A, B.—Arbor foliis elliptico-oblongis obtusis costis subtus ramulisque angulatis ferrugineo-tomentosis; perianthio 6-fido, staminibus 12.

Variet et flore octofido staminibusque sedecim.

Habitat in sylvis Nilghiry (Deenhutty in schedis). (E. Noton.) Vidi etiam in Hb. Wight. ♂ et ♀.—Florem femineam non vidi.

IX. ACTINODAPHNE.

(Lauri sp. Wall.)

Flores dioeci, e gemma imbricata paniculati. Perianthium sexfidum, laciniis æqualibus lacero-persistentibus. Stamina antherigera novem perfecta, triplici serie disposita, quorum tria interiora staminodiis geminis sessilibus stipata. Antheræ oblongæ, quadrilocellatæ, omnes introrsum dehiscentes valvulis sursum reflexis conformibus. Pistilli in masculo flore rudimentum. Bacca calycis tubo cyathiformi, laciniarum residuis appendiculato, imposita.—Inflorescentia vel (♂) panicula sessilis, apice racemosa, vel (♀) simpliciter racemulosa, ante anthesin squamis gemmæ axillaris involuta. Folia verticillata, penninervia. Gemmæ foliiparæ imbricatæ, squamis pluribus chartaceis.

A CYLICODAPHNE differt involucri defectu et calycis fructus appendicibus tum florum quoque internâ structurâ; a CECIDODAPHNE defectu staminodiorum quarti ordinis, aliisque; a BEILSCHMIEDIA antheris quadrilocellatis; a SASSAFRAS, cui sane proxima, perianthii tubo in fructus calyculum mutato, floribus rigidioribus, antherarum locellis superioribus non adeo contractis, foliis verticillatis.

Etymologia: *ἄκτις*, *radius*, et *δάφνη*, *laurus*, ob cupulam fructus limbi perianthii residuis radiatam.

Actinodaphne pruinosa.—*Laurus pruinosa* Wall. Cat. n. 2584, A, B.—Arbor? foliis verticillatis subtus cæsio-pruinosis, paniculis hirtis petiolo longioribus.

Crescit in Penang et Singapur; lecta a. 1822 a Wallichio.

SASSAFRAS.

(Laurus Lin., Borbonia Gært. ex parte*.)

Flores dioeci, racemosi. Perianthium sexpartitum, membranaceum, laciniis æqualibus basi persistentibus. Stamina antherigera novem perfecta, triplici serie disposita, quorum tria interiora staminodiis geminis stipitatis liberis crassis stipata. Antheræ lineares, quadrilocellatæ, omnes introrsum dehiscentes, locellis inferioribus lateralibus, superioribus a valvulis obtectis. Pistilli rudimentum nullum.

* *Borbonia globosa* Lam. Gært. de Fr. et Sem. III. p. 224. t. 222. f. 1. ad sinistram, quoad fructum huc spectat.

Flos femineus staminibus sterilibus tot, quot mari sunt, vel paucioribus; interioribus sæpe cum staminodiis in unum corpus coalitis. Bacca pedicello apice incrassato margineque chartaceo lobato, e perianthio residuo, cincto imposita.—Inflorescentia racemosa, subcorymbosa, a basi innovationis inter squamas deciduas progenita, pedunculata vel fasciculata. Flores flavi. Gemmæ foliiparæ perulatae. Folia alterna, decidua (an in omnibus?).

Quibus ab ACTINODAPHNE differat SASSAFRAS, supra expositum.

X. ENDIANDRA R. Br.

Flores hermaphroditi (polygami). Perianthium sexfidum, limbo deciduo. Stamina fertilia tria interiora. Antheræ bilocellatæ, posticæ. Stamina exteriora in glandulas faucis mutata vel nulla. Stigma globosum. Bacca perianthii tubo truncato immersa (an in omnibus?).—Inflorescentia paniculata, axillaris, duabus in speciebus nutans. Gemmæ foliiparæ parvæ, laxæ, squamis foliaceis carinatis. Folia alterna, penninervia et reticulata.

Adnot. In hoc genere staminodia tria tertii ordinis perfici puto, abortientibus contra sex exterioribus, hisque vel in glandulas abeuntibus vel omnino latentibus. Memoratu digna est figura horum staminum, quæ, filamentis brevissimis crassisque prædita, staminodiis tribus interioribus, in multis obviis, persimilia existunt, ut itaque in isto flore stamina quasi ad ultimam gradum evolutionis dejecta et ad angustissimum numerum redacta videantur. In nostra specie ejusmodi staminodia, seu glandulas, quales Swartzius in una specie observavit, non observavi, sed evidenti circulo glanduloso, e granulis minutis conflato, stamina ad basin cincta.

1. *Endiandra firma*; foliis ellipticis venosis utrinque reticulatis concoloribus, floribus recurvatis, annulo glanduloso obsoleto.—*Laurus firma* Wall. Catal. n. 2597.

Crescit in m. Pundua; legit F. D.—Arbor. (Folia cum petiolo 5—8 poll. longa, 1½—3 lata.)

XI. GYROCARPUS Jacq.

Jacq. Pl. Am. p. 282. t. 178. t. 80. Gaertn. de Fruct. et Sem. II. p. 92. t. 97. Brown Prodr. Fl. Nov. Holl. I. p. 404. ed. 2. p. 260. Spr. Gen. Pl. I. p. 112. R. et Sch. Syst. Veg. III. p. 16.

Flores polygami, in paniculam dichotomam dispositi: axillares hermaphroditi; reliqui masculi. Perianthium (4-) 6—8-fidum, laciniis aliquot in femina conrescentibus persistentibus; tubus germini adhærens. Stamina quatuor, laciniis quatuor exterioribus opposita, et ubi extima duo desunt, ad speciem binis collateralibus earum interposita. Antheræ bilocellatæ, valvulis totidem sursum reflexis dehiscentes. Staminodia quatuor, stipitata, clavata, in serie duplici magis interiori staminibus alterna. Stylus brevis; stigmatibus capitato. Caryopsis baccans perianthio apice bialato inclusa. Semen inversum, testâ durissimâ. Embryo inversus, cotyledonibus duplicato-reflexis radiculæ circumvolutis.—Inflorescentia ad basin innovationis terminalis, ante foliorum evolutionem in ramulo aphylo germinans, squamis caducis, herbaceis, coriaceis singulos pedunculos fulcientibus. Paniculæ breves, dichotomæ, floribus minutis, axillaribus, præsertim inferioribus, hermaphroditis, reliquis masculis circa ramulos glomeratis, brevipedicellatis (cum filamentis et staminodiis hirsutis). Gemmæ foliaceo-squamosæ. Folia alterna, ad apicem ramorum conferta, decidua, longe petiolata, lata, nervosa.

Adnot. 1. De vera hujus generis inter LAURINAS sede vix dubium est, cum CRYPTOCARYA genus viam paret. Modus evolutionis et omnis dispositio partium floralium congruunt, neque seminis vera structura graviter repugnat.

Adnot. 2. Quoad habitum et inflorescentiam ad URTICEAS hoc genus tendit, LAURINASQUE huic familiæ a latere confines esse demonstrat. *Dipterocarpus* quoque et *Shorea*, evolutionem calycis in fructum si spectes, accedunt.

1. *Gyrocarpus asiaticus* Willd.; foliis ovato-triangularibus subcordatis integris trilobisve glabris, ad nervos utrinque puberulis, petiolis pedunculo communi longioribus, alis fructus cuneiformi-lanceolatis angustis.—*Gyrocarpus asiaticus* Willd. Sp. Pl. IV. 2. p. 982. R. et Sch. Syst. Veg. III. p. 292. n. 2. Mant. p. 218. Brown.

Prodr. Fl. Nov. Holl. p. 404 (260). Wall. Cat. n. 968, A, B. *G. Jacquinii* Roxb. Pl. Corom. I. p. 2. t. 1. Fl. Ind. ed. Car. et Wall. I. p. 465. Pers. Syn. I. p. 145 (excl. synonym. *G. americani* Jacq.) Spr. Syst. Veg. II. p. 489. *Afrag*, Le Brun Voyage en Perse, II. p. 257. c. Ic.

Crescit in regione montana orae asiaticae, folia demittens sub finem temporis pluvii. Floret tempore frigido, arbore foliis exuta, quae (nova) flores mox sequuntur.—Arbor. (Folia 5 poll. longa, $3\frac{1}{2}$ lata.) Nomen apud Telingas *Tamucuo* (Roxb.).

XII. CASSYTA Lin.

(*Volutella Forskål.* *Calodium Lour.*)

Flores spicati, basi tribracteati. Perianthium sexfidum, laciniis persistentibus, tribus exterioribus nanis; tubus liber, in fructu baccatus. Stamina fertilia novem triplici ordine laciniis perianthii opposita, quorum tria interiora ad basin biglandulosa. Antherae bilocellatae, valvulis totidem sursum reflexis dehiscentes: tres interiores extrorsum versae. Staminodia tria, quarti ordinis, stipitata. Stylus brevis. Stigma parvum, discoideum, umbilicatum. Caryopsis subcarnosa, tecta perianthii tubo carnosio pervio, laciniis persistentibus coronato.—Inflorescentia: Spica simplex aut composita, aut glomeriformis, basi bracteolis minutis membranaceis instructa. Flores omnino sessiles. Folia nulla. Herbæ vel suffrutices volubiles contorti, parasitici, radiculis papilliformibus fruticibus innascentes.

1. *Cassyta filiformis* Lin.; glabra spicis simplicibus pedunculatis, floribus distantibus, staminibus primi ordinis petaloideis.—*Cassyta filiformis* Lin. Sp. Pl. p. 530. Blume Bydr. p. 574. Osb. Iter, p. 243. Pers. Syn. I. p. 450. Burm. Ind. p. 92. Wall. Cat. n. 2608, A, B. *Cassyta filiformis* Willd. Sp. Pl. II. p. 487. Spr. Syst. Veg. II. p. 271. ad partem. *Calodium cochinchinense* Lour. Fl. Cochinch. ed. Willd. I. p. 302? *Cuscuta indica floribus albis stellatis*, Burm. Mus. Zeyl. p. 67. Thes. Zeyl. p. 84. *Cuscuta indica javanica*, *Kankong* incolis dicta, *Kleinhof* apud Burm. *Cuscuta*, *Rombut Putri*, Rumph. Herb. Amb. V. p. 491. t. 184. f. 4. *Acacia Valli* Rheede Hort. Mal. VII. p. 83. t. 44. Ray Suppl. p. 551.

Nomen Sanscr., *Medica Tali* (Rheed.). Malaice, *Dansidan* et *Rambut Putri* vel *Daun Tali Tali* (capillitium principissae). Arabice, *Cuschut* et *Cuschuta*, et exinde inter Malayos et Moluccenses *Cussu* [perplexum virgultum] (*Rumph.*). Javanice, *Daun Tali* (Blume).

β. caule crassiori, spicis saepe in gyrum contortis.

Crescit in Malabar (Rheede); in Amboinae littore et circa ostia fluminum (Rumph.); in montibus provinciae Palaveram (Hb. Wight); in fruticetis circa Bataviam (Blume). (Vidi exempla ex Herb. Madras.) Caules filiformes, glabri, valde contortuplicati.

Adnot. *Cassyta filiformis* Jacq., a *Jacquino*, iterataque ab *Hookerio* in *Exotic Flora* nitide depicta, sic definienda: *Cassyta (americana)*, glabra, spicis simplicibus pedunculatis, floribus distantibus, staminibus primi ordinis clavatis.—*Cassytha filiformis* Jacq. Pl. Amer. p. 115. t. 97. Hook. Exot. Fl. t. 167. *Cassyta filiformis* Willd. Spr. ad partem. *Cuscuta baccifera Barbadosium a maritimis*, Pluk. Almag. p. 126, Phytogr. t. 172. f. 2.—Crescit in India occid. (Jacq.); insula St. Vincentii (Hooker).

XIII. CRYPTOCARYA R. Br.

Flores hermaphroditi, paniculati. Perianthium subinfundibuliforme, ad tubum usque sexfidum, limbo aequali deciduo. Stamina fertilia novem triplici serie, quorum tria interiora staminodio stipitato libero ad utrumque latus instructa. Antherae oblongae, bilocellatae, valvulis totidem sursum reflexis dehiscentes: sex exteriores introrsum, tres interiores extrorsum conversae. Staminodia tria substipitata, capitulo angusto acuto, in serie magis interiori. Stigma capitatum. Germen tubo perianthii immersum. Caryopsis tubo nudo clauso drupaceo perianthii oblecta.—Inflorescentia paniculata axillaris, vel et in terminalem abiens. Gemmae foliiparæ squamis paucis foliaceis carinatis. Folia penninervia.

Genus, tubo perianthii distincto, fructuque a calycis tubo, limbo orbato, penitus recondito, longe distinctissimum.

Adnot. Baccam dicit fructum clariss. Brownius; in nostris autem Vol. II.

fructus, proprie sic appellandus, in siccam caryopsin evidenter abit. An itaque duo hic latent diversa genera? Sed habitus omnium optime convenit. Clariss. Blume, "Pericarpium drupaceum tectum tubo calycis baccato" CRYPTOCARYÆ tribuens, partem lignoso-crustaceam, a perianthio provectam, pro fructus strato externo posuisse, neque baccæ aliquid simile nisi in tunicis exterioribus floralibusque invenisse videtur.

1. *Cryptocarya floribunda*; foliis ovali-oblongis brevi-cuspidatis subtus glaucis glabris, paniculis axillaribus dichotomis in terminalem nudam abeuntibus flavescenti-tomentosis.

β. foliis ellipticis obtusis, probabiliter morbosis.—*Laurus floribunda* Wall. Cat. n. 2593, A, B.

Crescit in Sillet (F. D.), unde in Hortum bot. Calcuttensem illata est.—Arbor amœna. Folia 5—8 poll. longa (c. petiolo), $1\frac{3}{4}$ —3 lata.

Adnot. An vere diversa a *Cryptocarya glaucescente* Br. Prodr. Fl. Nov. Holl. I. p. 402. ed. 2. p. 258?

2. *Cryptocarya amygdalina*; foliis ellipticis brevi-cuspidatis utrinque reticulatis concoloribus glabris, paniculis axillaribus in terminales ramorum abeuntibus strictis dichotomis tomentosis, fructibus oblongis muticis ecostatis.—*Laurus ? amygdalina* Herb. Hamilt., Wall. Cat. n. 2585.

Habitat in Patgong, lecta a cl. Hamilton d. 26 Mart. a. 1809 cum floribus et fructu maturo.—Arbor præcedentis habitu, sed notis propriis eximie distincta. Folia 5—7 poll. longa, 2— $2\frac{1}{2}$ poll. lata. Flores paullo majores ac in *Cryptocarya floribunda*.

XIV. BEILSCHMIEDIA.

(*Lauri* sp. *Roxb.* *Tetranthera* sp. *Wall.*)

Flores dioeci vel hermaphroditi in ramulo articulado primâ juvenile squamato racemosi. Perianthium sexpartitum, laciniis æqualibus deciduis. Stamina fertilia novem, triplici serie; antherae oblongae, bilocellatae, valvulis totidem adscendentibus, interiores a latere magisque extrorsum, dehiscentes. Staminodia tria ovata, substipitata in serie magis interiori cum staminibus tertiæ seriei alternantia; tria capitulata, staminibus secundæ seriei singulatim approximata; interdum etiam tria seriei exteriori respondentia. Stigma depressum, subdiscoideum. Germen bilocellatum. Bacca coriacea monosperma cum rudimento dissepimenti, perianthii basi persistenti imposita.—Inflorescentia axillaris, pedunculo communi brevi articulado, ante evolutionem squamis imbricatis deciduis uni- vel pauci-floris tecto, quarum inferiores sæpe steriles longius persistunt. Post lapsum igitur squamarum racemosi evadunt flores. Folia venosa.

Differt a CRYPTOCARYA formâ perianthii, staminum dehiscentiâ, staminodiorum formâ situque, fructu nudo, neque tubo perianthii incluso, et inflorescentiâ.

Beilschmiedius, pharmaceuta Olaviensis, Silesius, libri utilissimi de Plantarum distributione geographica et dissertationum complurium doctorum auctor, Floræ patriæ carus, qui primus inter Germanos Jungermanniam Blasiam perfecte fructificantem observavit.

1. *Beilschmiedia Roxburghiana*; racemulis basi nudis, perianthii laciniis ovalibus.—*Laurus bilocularis** Roxb. Hort. Calc. p. 30. Wall. Cat. n. 2605.

Crescit in Tipperah, lecta a S. Harris a. 1797. Floret mense Februario, maturat fructum m. Junio. Vidi exemplum cultum ex Horto Calcuttensi.—Arbor speciosa. Folia cum petiolo unciali 6— $6\frac{1}{2}$ poll. longa, 2— $2\frac{1}{4}$ poll. lata, glabra, pennatim venosa reticulata, concoloria.

A *Beilschmiedia fagifolia* differt hæc: foliis majoribus nitidis, floribus majoribus laciniis tioribus, racemulisque majoribus, axi florente non, ut in illa, e basi gemmæ immediate prodeunte, sed pedunculo communi æquali nudo, gemmæ baseos vices gerente, sublato.

2. *Beilschmiedia fagifolia*; racemulis basi squamatis, perianthii

* Bilocularis cognominatio non proprio accipienda sensu, cum fructus BEILSCHMIEDIÆ in omni statu uniovulatus et monospermus existat. Differt autem hæc species plicâ membranæ internæ inter cotyledones prominulâ, quæ, etiamsi in aliis quoque observetur Laurinarum generibus, in isto tamen ante omnia in oculos cadit et dissepimenti falsi suspicionem movet.

laciniis lanceolato-linearibus.—*Tetranthera fagifolia* Wall. Cat. n. 2539.

Crescit in montibus provinciæ Sillet (F. D.).—Arbor, foliis 3—3½ pollices longis.

XV. CECIDODAPHNE.

(*Tetranthera* sp. Wall. Lauri sp. Hamilt.)

Flores hermaphroditi (?) e gemma galliformi terminali paniculati. Perianthium subinfundibuliforme, sexfidum, laciniis deciduis. Stamina fertilia novem, triplici serie disposita, quorum tria interiora staminodiis binis capitatis ad basin stipata. Antheræ ovatae, quadrilocellatae, valvulis totidem adscendentibus dehiscentes; tres interiores retro spectantes. Staminodia tria capitulo antheriformi subulato in serie magis interiori. Stigma disciforme. Fructus . . . —Inflorescentia: Gemma, in ramo vel ramulo terminalis, crassa, dense squamosa, ramis e singula squama singulis, paniculatis multifloris brevibus paniculam densam thyrsoidem subglobosam constituentibus. Folia perennantia, venosa.

Habitu proxima *CRYPTOCARYÆ*, cui forsan et fructu calyce oblecto conjunctior olim invenietur; sed differt antheris quadrilocellatis et inflorescentiâ densâ gallam ante anthesin referente. Ab *ALSEO-DAPHNE*, cui, sola characteris essentialis verba consideranti similis videri possit, omni habitu distat, et pistilli florumque jam inspectio sufficit, ut oculo, hac in familia modice exercitato diversissimam fore fructus perfectioris indolem eluceat.

Etymologia: *κηκός*, galla, et *δάφνη*, *laurus*, ob inflorescentiam ante anthesin galliformem.

Cecidodaphne glaucescens.—*Tetranthera glaucescens* Wall. Cat. n. 2560, A, B. *Laurus glaucescens* Hb. Hamilt.

Crescit in Sillet (Ham. et F. D.) Floret a Februario in Aprilem usque.—Arbor (alta) paniculis albo-tomentosis. Folia cum petiolo 4—6 pollices longa, 1½—2 p. lata, acuminata, basi acuta, glabra, utrinque viridia, penninervia.

Adnot. Ob stamina solito breviora, valvulas antherarum, etiam in floribus defloratis sæpe clausas et pistillum ratione staminum magis perfectum, dubius hæreo, num feminei potius sexus sint flores, quos examini subjeci, latente igitur adhuc masculâ plantâ.

XVI. MACHILUS Rumph.

(*Persea Blume.*)

Flores hermaphroditi, paniculati, nudi. Perianthium sexpartitum, chartaceum, limbo patente persistente tuboque haud mutatis. Stamina fertilia novem triplici serie, quorum tria interiora staminodiis binis stipitatis liberis ad utrumque latus stipata. Antheræ oblongæ, quadrilocellatae, valvulis totidem adscendentibus dehiscentes, locellis sex exteriorum introrsum, trium interiorum extrorsum spectantibus, inferioribus duplo majoribus. Staminodia tria stipitata capitulo acuto antheriformi in serie interiori, dorso eglandulosa. Stigma discoideum. Baccæ perianthio haud mutato patenti aut reflexo insidens.—Inflorescentia paniculata, paniculis ad basin innovationum terminalium alternatim aggregatis nudis (squamis defluentibus) corymbosis. Gemmæ foliiparæ perulatae squamis imbricatis. Folia penninervia, venosa, venis subtilibus.

Adnot. 1. Cl. Wendland in opere præstantissimo *Botanische Beobachtungen*, Hanov. 1798, de *Lauro indica* agens, staminodia illa quarti ordinis, a se optime observata atque descripta, in arbore, solo naturali crescente, perfici atque in vera stamina abire adsumit. Contra hæc experimento in quam plurimis ramis, in solo natali decerpitis, instituto, certior factus sum, naturam hac in re sibi quam maxime constare, nec unquam fere staminodia hæc ejusdem speciei in stamina transformari; quod quidem cum intra fines specierum immotâ lege teneri videatur, in generum triumque ampliori campo secundum Wendlandii opinionem ita evenit, ut non solum staminodia, sed vel ipsæ perianthii laciniæ in stamina evolvantur.

Adnot. 2. *Persea* genus perianthio toto deciduo differt, alia ut taceam. Vide synopsis generum.

1. *Machilus odoratissimus*; foliis lanceolatis oblongove-lanceolatis utrinque acutis glabris, paniculis compositis.

α. paniculis floribusque pubescentibus, baccis globosis.—*Laurus*

odoratissima Wall. Cat. n. 2607, A ex parte, C, D, E. *Laurus indica* Lour. Fl. Cochinch. ed. Willd. I. p. 311. n. 8. *Machilus quarta* Rumph. Hb. Amb. III. p. 70. t. 42. *Laurus Madagascariensis angustifolia pallida odoratissima* Pluk. Alm. I. c. tab. 199. fig. 2? *Laurus Champa* Hb. Hamilt. *Laurus bombycina* Hb. Hamilt. β. paniculis floribusque glabriusculis aut sparsim puberulis, baccis ovatis vel (immaturis) oblongis.—*Laurus odoratissima* Wall. Cat. I. c. A ex parte, B, F.

Crescit (α et β) in Napalia (Wallich 1821). Var. α in Patgong et Gualpara (Hamilt.), in montibus Sillet (F. D.). Var. β in Singapur (Wallich 1822), in montibus prope Deyra-Dhoon (idem 1825). In Cochinchinæ sylvis montanis (Lour.). In Amboina (Rumph.)?—Arbor magna.

Adnot. 1. Varietates citatæ a tempore evolutionis pendere videntur multisque modis inter se confluunt. Etiam formæ, quas literis D, E, F signatas, ut dubias, exhibet Catalogus Wallichianus, ex harum sunt numero. Pedunculi et flores pro ætate exuunt pubem, et perianthia sterilia, auctâ magnitudine, nec vero reflexis laciniis, alieni quid exhibent. Hæc autem perianthia genitalibus jam carent.

Adnot. 2. *Stigmatidium elegans* Fée haud raro in hujus arboris foliis obvium.

Adnot. 3. *Laurus indica* Lin., *pseudoinдика* Link, Maderæ insulæ civis, differt: foliis majoribus latioribus, perianthii laciniis ovatis, exterioribus conspicue brevioribus, quæ nostra in specie interioribus æquales sunt. *OCOTEA* autem hæc, nec *PERSEA* est generis.

2. *Machilus macranthus*; foliis ellipticis acutis subtus glaucis glabris venoso-penninerviis, paniculæ amplæ pubescentis ramulis divaricatis bifidis.—*Laurus macrantha* Wall. Cat. n. 2587.

Crescit in Nilghiry (Noton).—Arbor? Fructum maturum non vidi.

Species anomalæ, pedunculis paucifloris; pedicellis fructus incrassatis carnosus:

3? *Machilus peduncularis*; foliis ellipticis cuspidatis basi attenuatis, pedicellis fructus incrassatis arcuatis pedunculo umbellulæ longioribus.—*Laurus peduncularis* Wall. Cat. n. 2596. *Machilus species tertia media* Rumph. Hb. Amb. III. p. 70. tab. 41.?

Habitat in Penang (Wallich 1822).—Arbor.

Adnot. Icon Rumphii, I. c. exhibita, omnino in hanc speciem convenit; in descriptione autem folia inferiora 5—6 pollicum longitudinis esse, 5 p. latitudinis (quod certò errore calami dictum, cum in icone omnia ovalia exhibeantur folia), suprema 9—10 pollices longa, 4 lata; ad sequentem speciem hæc aptius referri posse videntur, sed fructus in pedicellis recurvatis, nec erectis, pingitur. Dubius tamen hæreo, numne rectius ad sequentem referatur synonymon Rumphianum.

4? *Machilus incrassatus*; foliis ellipticis utrinque acutis, pedicellis fructus incrassatis rectis pedunculum umbellulæ subæquantibus.—*Laurus incrassata* Jack in Malayan Miscellanies II. n. vii. p. 33? Wall. Cat. n. 2589. In Singapur legit G. Prince.—Arbor.

Observ. Quoad modum crescendi præcedenti (*M. pedunculari*) similis, ut, congeneres esse, dubitari nequeat, tametsi flores desint.

Adnot. Quod ad synonymon *Machili* Rumphii jam supra declaratum est, hoc nisi forte tertiam diversamque ab hac et præcedente speciem exhibeat, foliorum amplitudine (etiam pedicello, ratione ad pedunculum habitâ, brevior), cum *M. incrassato* propius convenire, quam cum *M. pedunculari*; sed situm et directionem ejus cet. magis ad hanc accedere*.

XVII. OCOTEA Aubl.†

Flores hermaphroditi, paniculati, nudi. Perianthium sexfidum, subcoriaceum, limbo tuboque sub fructu persistentibus cupulam regularem sexlobam exhibentibus. Stamina fertilia novem triplici serie, quorum tria interiora staminodiis binis stipitatis liberis ad

* Beatus Gulielmus Jack I. c. "*Machilum medium* Rumph. Amb. III. p. 70. tab. 42." sub *Lauro* incrassata sua citat.—W.

† *Ocotea* genus in opere splendidissimo Humboldtiano sensu latiori sumtum diversas evolutionis formas complecti videtur.—*Ocotea guianensis* Gært. de Fr. et Sem. III. p. 227. t. 222. f. 2 *Nectandra* generis est, ejusdemque bene distincti baccæ cupulæ ore contractæ immersâ soloque a vertice conspicuâ.

utrumque latus stipata. Antheræ oblongæ, quadrilocellatæ, valvulis totidem adscendentibus dehiscentes, locellis sex exteriorum introrsum, trium interiorum extrorsum spectantibus; inferioribus duplo majoribus. Staminiodia tria stipitata capitulo acuto antheriformi in serie interiori, dorso eglandulosa. Stigma discoideum. Bacca perianthio in cupulam regularem sexfidam conniventi induratoque basi immersa.—Inflorescentia paniculata vel subcorymbosa, axillaris. Gemmæ foliiparæ parvæ, squamis paucis carinatis foliaceis hiantibus. Folia penninervia.

Adnot. Perianthium *persistens* expressis verbis poscit Aubletius. Species ideo, quæ limbo deciduo instructæ sunt, ab *OCOTEA* remotas, generi proprio, *ALSEODAPHNÆ*, adscribimus.

1. *Ocotea sericea*; foliis oblongis acutis basi obtusiusculis subtus minute pubescentibus, novellis paniculisque decompositis tomentosocanis.—*Laurus sericea* Wall. Cat. n. 2606. *Cinnamomum tomentosum* Don Fl. Nep. p. 66.

Crescit in Napalia (Wallich a. 1821.); in valle Deyra (idem a. 1825.) Ad Suembu Napalensium (Don fid. Hb. Hamilt.). Floret Aprili.—Arbor, *Machilo odoratissimo* consimilis.

Adnot. Fructum non vidi; ob summam autem specierum sequentium similitudinem huc referre arborem non dubitavi.

2. *Ocotea glaucescens*; foliis oblongo-lanceolatis utrinque acutis glaucis, paniculis thyrsoides in corymbum terminalem dispositis tomentosus.

α. paniculis longioribus, ferrugineis.—*Laurus glaucescens* Roxb. Hort. Calcutt. p. 30. Wall. Cat. n. 2592.

β. paniculis brevioribus, incanis.—*Laurus floribunda* Wall. Cat. n. 2593, A, (ex parte, casu certe immixtis exemplis).

Crescit in Sillet, lecta primum a M. R. Smith, et in Hortum Calcuttanum illata a. 1811 (Roxb.); ibidem legit F. D. Floret Febr.—Aprili; maturat fructum Maio et Junio mensibus.—Arbor grandis et speciosa. Fructus non observatus est.

Var. β non differt, nisi paniculis in corymbo paucioribus, ad summum 3-pollicaribus, strictioribus et rigidulis, tomento griseo nec rufo-ferrugineo vestitis, ramis plerisque bifidis, sexfloris, floribusque præsertim ramorum inferiorum distinctius pedicellatis, paullo brevioribus, neque minus latis, griseis, nec ferrugineis.

Adnot. Species, situ panicularum satis distincta, *Ocotea*? *sericea* soli propinqua.

3. *Ocotea attenuata*; foliis oblongo-cuneiformibus acutis subtus reticulatis ramulisque ferrugineo-hirsutis, paniculis longe pedunculatis strictis dichotomis incanis, perianthii laciniis ellipticis.—*Laurus attenuata* Wall. Cat. n. 2600. *Persea macrophylla* var. *cuneata* Blume Bydr. p. 568.

Crescit in montibus provinciæ Sillet (F. D.).—Arbor. Fructus non visus.

Adnot. Difficile dictu, num *Ocotea* generis sit an *Persea*, cum fructus desit. Ob gemmas itaque foliaceas *Ocoteis* adjunximus, ad quas eas relegamus species, quæ perianthio cum limbo superstiti in cyathi formam durescente gaudent, cum idem in *PERSEA* non mutatum totumque ad basin fructus *explanatum* perstet. Hæ autem species, quas perianthio in fructu expanso chartaceo gaudentes adhuc vidimus, gemmis etiam omnes præditæ conspiciantur perulatis imbricatisque.

4. *Ocotea paniculata*; foliis obovato-ellipticis utrinque acutis subtus reticulatis, costis ramulis paniculisque dichotomis laxis ferrugineo-tomentosis, perianthii laciniis fructuque ovatis.—*Laurus paniculata* Wall. Cat. n. 2598, A.

β. minor, foliis basi cuneiformibus longius acutatis, paniculis paucifloris laxius puberulis.—*Laurus paniculata*? Wall. Cat. n. 2598, B.

Habitat in Napalia, lecta anno 1821 a Wallichio. Var. β in Hb. Wight. vidi.—Arbor. Simillima *Ocotea attenuata*. Foliorum majora 7—8 pollices longa, 3—3½ poll. lata. Var. β differt: foliis minoribus, basi magis attenuatis, tenuioribus, paniculæ ramis alternis plerisque trifloris, pube tenuiori inspersis. Sed hæc a debilitate ramuli pendere, cum omnibus notis essentialibus conveniat, accuratâ exempli Wightiani contemplatione constat.

Adnot. *Persea macrophylla* Blum. Bydr. p. 568. solo fructu oblongo, nec ovato, differre videtur. An vere distincta species?

5. *Ocotea pubescens*; foliis oblongis ellipticisve acuminatis basi cuneiformibus, subtus laxè reticulatis trabeculatis una cum ramulis paniculisque flaccidis dichotomis pubescentibus, perianthii laciniis interioribus ellipticis tomentosus.—*Laurus pubescens* Wall. Cat. n. 2595, (exemplum unum.)

Crescit in Napalia, ubi Wallich a. 1820 invenit.—Arbor.

Adnot. 1. Proxime accedit *Ocotea paniculata*, et, quod ad integumentum, maxime ejus varietati β, sed differt foliis longioribus tenuioribus, etc.—Ab *Ocotea lanceolata* differt paniculis pubescentibus, nec fere glabris, tenuioribus minusque corymboso-patentibus, tum laciniis interioribus tomentosus canescentibus; alia ut taceam.

Adnot. 2. Folia hujus arboris et ista sequentis sæpe *Stigmatidio Phyllochari* et *elegante Meyer.* ornantur, quæ unius speciei diversos status esse puto.

Adnot. 3. In collectione Wallichiana *Lauri pubescentis* nomine et numero trium diversarum specierum exempla inveni, scilicet: 1°. *Ocotea lanceolata*; 2°. *Ocotea*, quam *pubescentem* appellandam esse censebam; 3°. *Ocotea pallida*.

6. *Ocotea lanceolata*; foliis oblongo-lanceolatis lanceolatisve utrinque longe acuminatis subtus tenuissime pubescentibus, corymbis glabris patentibus, staminibus interioribus hirsutis.—*Laurus lanceolata* Wall. Cat. n. 2599, A—E. *Laurus lanceolaria* Roxb. Hort. Calcutt. p. 30? *Laurus pubescens* Wall. Cat. n. 2595 (ex parte.)

β. foliis longissime caudato-acuminatis.—*Laurus salicifolia* Hb. Hamilt. ? *Laurus camphorata* Hb. Hamilt.

Crescit in Sillet (F. D.) et e Sillet in Hortum Calcuttanum illata; in Napalia (Wallich a. 1820 et 1821.). Var. β in Napalia, Rangamati et Sivapur (Hamilt.). Floret a Februario usque ad Maium, maturatque fructus Junio et Julio. Lauri lanceolarie, sin eadem ac nostra, linguâ Bengalensi nomen *Sundhigool*.—Arbor.

Adnot. 1. Var. β præter indicatam nec ullam exhibet differentiam. Exemplum, quod *Lauri camphorata* nomine ex Herbario Hamiltoniano adest, nihil camphorati jam exhibebat.

Adnot. 2. In Horto Calcuttano culta arbor paullo brevioribus latioribusque foliis prodiit, cæterum spontaneæ simillima.

Adnot. 3. *Ocotea declinata* Blum. Bydr. p. 512, nostræ proxima, differt foliis brevioribus, supra lucidis, subtus glaucis et glabris, paniculisque (etiam in hac corymbosis) ratione foliorum majoribus.

7. *Ocotea pallida*; foliis lanceolatis cuspidatis subtus glaucescentibus, ramulis paniculisque contractis pubescentibus, perianthii laciniis ovatis subæqualibus.—*Laurus pubescens* Wall. Cat. n. 2595 (ex parte).

Habitat in Napalia. Lecta anno 1820 a Wallichio.

Adnot. 1. Species hæc primo intuitu accedit: 1°. quoad inflorescentiam *Ocotea sericea*, quæ differt, foliis ætate subtus subtiliter reticulatis nec glaucis, paniculis omnibus aphyllis, perianthii laciniis oblongis; 2°. quoad folia *Ocotea lanceolata*, hujus vero folia subtus non glaucescunt, rami adultiores albâ epidermide splendent, paniculæ corymbosæ sunt et subdivaricatæ, floresque minores glabrescunt; 3°. *Ocotea pubescens*, quæ quidem longius distat foliis subtus magis venosis, nec glaucis, basi cuneatis, apice breviscuspidatis, paniculisque laxis patulisque majoribus, floribus autem minoribus.

Adnot. 2. Et *Ocotea pallida* folia *Stigmatidio eleganter* infestantur simulque ornantur.

8. *Ocotea ligustrina*; foliis lanceolatis utrinque acutis subtus tenuissime pubescentibus, paniculis staminibusque glabris.—*Laurus ligustrina* Wall. Cat. n. 2588.

Lecta in Singapur a Wallichio anno 1822. (Fructum non vidi.) *Ocotea lanceolata* persimilis.

XVIII. ALSEODAPHNÆ.

(Lauri spp. Wall. Cat. *Ocotea* H. et K., Blume.)

Flores hermaphroditi, paniculati nudi. Perianthium sexfidum, chartaceum, limbo deciduo. Stamina fertilia novem triplici serie, quorum tria interiora staminodiis binis stipitatis compressis ad basin stipata; filamentis in pluribus dilatatis. Antheræ oblongæ, quadri-

cuttano floruit mensibus temperatis, fructumque maturum præbuit m. Maio.—Arbor valida.

Adnot. Cum *Camphora officinarum* convenit multis, sed differt: foliis majoribus, tenuioribus, minime lucidis, plerisque basi magis attenuatis, sed cuspidate apicis breviori præditis, non concinne triplinerviis, nonnullis ad speciem penninerviis, sed semper tamen ramis infimis acutiori angulo egressis apicem petentibus, tum gemmis obtusioribus, ramulis florentibus brevibus subcorymbosis foliis parvis instructis, corymbulisque florum minoribus magis confertis.—Odor florum tritorum valde camphoratus.

XX. CINNAMOMUM *Burm., Blum.*

(*Persea* spp. *Spreng.* *Lauri* spp. *Lin. et alior.*)

Flores hermaphroditi, seu potius polygami, paniculati vel fasciculati, nudi. Perianthium sexfidum, coriaceum, limbi parte superiore, vel rarius toto limbo, in tubo cupuliformi decidua. Stamina fertilia novem triplici serie, quorum tria interiora staminodiis binis sessilibus glanduliformibus ad basin stipata. Antheræ ovatae, quadrilocellatae, valvulis totidem adscendentibus dehiscentes, locellis inferioribus magis lateralibus; tres interiores extrorsum versæ. Staminodia tria capitulo ovato in serie magis interiori. Stigma discoideum. Bacca monosperma, basi perianthii cupuliformi margine ob partem inferam laciniarum persistentem sexfidâ suffulta.—Inflorescentia paniculata, trichotoma, rariusve, ob ramos abbreviatis, in fasciculum redacta, non involucreta, axillaris vel terminalis. Folia nervosa, in plerisque per paria approximata vel subopposita. (Gemmae foliiparæ non squamatis imbricatæ.)

Adnot. Ab omnibus Laurinis CINNAMOMI species distinguuntur laciniiis perianthii in plerisque ad dimidium tantum deciduis, parte inferiori indurata restante, quo evenit, ut cupula truncata quidem, sed tamen sexfido margine in conspectum veniat. Summitas laciniae suturâ arcuatâ discedit, sub anthesi non conspicuâ, mox autem, cum tubus cum laciniarum parte inferiore durescat, lineæ paululum elevata formâ apparet, a qua superior pars laciniae introrsum flexa per aliquod tempus perstat, donec processu temporis a basi penitus separatur; in paucis tota quidem lacinia perstat, sed lineæ separationis non minus evidens, dubium non relinquit, quin possit saltem, casu, vel naturâ saltem viam monstrante, spontanea evenire solutio.

1. *Cinnamomum obtusifolium*; ramis obtuse tetragonis glabris, foliis elliptico-oblongis apice sphacelatis basi acutis triplinerviis arcuato-reticulatis, paniculis terminalibus corymbosis, laciniiis calycis cum fructu persistentibus.—*Laurus obtusifolia* Roxb. Hort. Beng. p. 30. Wall. Cat. n. 2574 A et C. *Laurus Bejolgota* Hamilt. in Linn. Transact. xiii. 2. p. 559 (excl. synonym. *Lauri malabathricæ* Hort. Beng.). Spr. Syst. Veg. ii. p. 265. n. 3.

β. ♀, antheris nullis, paniculis thyrsoidis.—*Laurus macrophylla*, an *L. obtusifolia* Roxb.? Wall. Cat. n. 2575. *Katou Karua* Rheed. Hort. Mal. v. p. 105. t. 53?

Habitat in sylvis Kamrupæ (Rungpur) ad Tistam fluvium prope Patgong (Hamilt.); in Sillet, a D. S. lecta (Wallich).—β. in Horto Calcuttæ et Sillet illata. Floret Januario et Februario; maturescunt fructus Julio et Augusto mensibus. Nomen Benghalensium *Bejolgota* (Hamilt.), *Kintun* (Roxb.).—Arbor magna.

Adnot. Mirum, arborem "Katou Karua," secundum Rheedii annotationes vulgarem et cujus cortex "odoris saporisque cinnamomi" haud infrequenti usu haberi videbatur, nunc penitus nos latere, neque inter tot, quot Wallichius alique strenuissimi observatores ex India orientali retulere, ullum adesse exemplum, quod Katou Karuæ iconi atque descriptioni omni numero conveniat. *C. obtusifolii* cortex fuscus insipidus fere, odore, cum dissecetur, Cinnamomi fugacissimo.

2. *Cinnamomum Bazania*; ramis acute angulatis glabris, foliis elliptico-oblongis apice sphacelatis basi acutis triplinerviis arcuato-reticulatis, paniculis axillaribus terminalibusque solitariis angustis, laciniiis calycis cum fructu persistentibus.—*Laurus Bazania* Hamilt. in Act. Soc. Lin. Lond. xiii. 2. p. 560. *Laurus obtusifolia* Wall. Cat. n. 2574 B.

Habitat in montibus Napaliæ superioribus prope Cosam fluvium (Hamilt.), lectum Septembri 1810 cum floribus defloratis (Hb. Vol. II.

Hamilt.). Nomen apud indigenas: *Bazania*.—Arbor simillima præcedenti, ejusque fortasse varietas.

3. *Cinnamomum iners* Reinw.; ramis teretibus glabris, foliis elliptico-lanceolato-ovoblongis basi acutis apice subattenuatis obtusis triplinerviis subaveniis, paniculis compositis axillaribus terminalibusque pedunculatis, floribus sericeis, laciniiis infra apicem deciduis.—*Cinnamomum iners* Reinw. Blume Bydr. p. 570. *Laurus iners* Reinw. in litt. *Laurus Malabathrum* Wall. Cat. n. 2583 A (ex parte). Variat perianthio novemfido dodecandro.

Crescit in Penang (Wallich); in fruticetis montanis Javæ (Reinwardt, Blume).—Frutex?

4. *Cinnamomum dubium*; ramis teretibus glabris, foliis (superioribus) ovatis apice attenuatis basi obtusis triplinerviis subaveniis, paniculis axillaribus subterminalibusque pedunculatis subsimplicibus parvis, floribus sericeis, laciniiis ovatis acutis.—*Laurus dubia* Wall. Cat. n. 2571. *Laurus Cassia* Hb. Wight.

Habitat... Vidi exemplum Herbarii Wightiani, maxime incompletum, at nulli præcedentium apte conferendum, nisi forte *Cinnamomi inertis* sit varietas. Cortex inodorus.

5. *Cinnamomum eucalyptoides*; ramis teretibus glabris, foliis inferioribus elliptico-oblongis, superioribus subovatis basi acutis apice subattenuatis obtusis trinerviis subaveniis, paniculis subterminalibus axillaribusque sessilibus, floribus argenteo-sericeis, laciniiis obovato-cuneiformibus medio deciduis.—*Laurus malabathrica* Roxb. Hort. Calc. p. 30. Wall. Cat. n. 2583 B. *Laurus nitida* Hb. Hamilt. Wall. Cat. n. 2582 C.

Variat perianthio quadrifido, staminibus quinque (scilicet 3 exterioribus et 2 interioribus, quorum alterum staminodio singulo alterum geminis ad basin instructum est), et staminodiis liberis interioribus duobus oppositis.

Vidi exempla culta ex Horto Calcuttæ.—Arbor. Sapor et odor foliorum fortis et acris caryophyllorum cum levi camphoræ tinctura. Baccam non vidi. Media quasi species inter *Cinnamomum iners* et *nitidum*, ut ægre distinguas.

Adnot. 1. Flores hujus speciei anomali, quadrifidi pentandri ad dubiam illam Katou Karuam Rheedii alludere videntur, cujusmodi flores certè et in aliis Cinnamomorum speciebus inveniuntur.

Adnot. 2. Hujus quoque arboris folia (ut ista *Cinnamomi obtusifolii*, *C. Tamalæ* aliorumque) inter *Folia Malabathri* officinarum recensenda esse, neque immerito eam Malabathri nomine a Roxburghio proponi, experimento, in pharmacopolarum tabernis instituto, edoctus sum.

6. *Cinnamomum nitidum*; ramis teretibus glabris, foliis ovato-ellipticis basi apiceque subattenuato-obtusis triplinerviis obsolete venulosis, superioribus majoribus, paniculis subterminalibus axillaribusque, inferioribus sessilibus elongatis, floribus argenteo-sericeis, laciniiis ellipticis medio deciduis.—*Cinnamomum nitidum* Hook. Exot. Fl. tab. 176. (excl. synonym. *Cinnamomi Cassiæ* Nees ab E. Disput.)? *Laurus nitida* Roxb. Hort. Calc. p. 30. Wall. Cat. n. 2582 A.

Habitat in Sumatra (Roxb.); a Carolo Campbell a. 1802 in Hortum Calcuttanum illatum. Floret Januario et Februario, maturat fructus Maio et Junio.—Arbor. Nomen Malaicum: *Coolit manes* (Roxb., Marsden). Corticis odor saporque cinnamomeus.

Adnot. 1. *Cinnamomi Zeylanici* varietati α adeo similis est hæc arbor, ut nisi plurimam fidem tribuendam censerem viris, qui utramque arborem in eodem horto sub dio crescentem per plures annos observare, distinctamque esse speciem declarare, ipso etiam Hookero in libro citato annuente, varietatis loco lubentius posuissem. Ex altera autem parte accedit, quoad inflorescentiam, *Cinnamomo eucalyptoidi*, differt autem odore et sapore corticis.

Adnot. 2. Icon cl. Hookeri paniculas sistit, ut decet plantam in caldario nutritam, minores, depauperatas, nec basi divisas, et staminodia geminata stipitata. Quæ quidem, præsertim cum folia elliptico-lanceolata et ad apicem usque nervosa descripta (neque vero in icone depicta) memineris, magis cum *C. eucalyptoidi* nostro, quam cum *C. nitido* convenire videntur; obstat autem, quod *cinnamomi* ex hac arbore parati mentionem repetat, nullâ adnotatione additâ, tametsi foliorum tantum, neque corticis, odorem et sorem ex propria ob-

servatione, adeoque caryophyllaceum sane magis quam cinnamomeum pro nota adjiciat. Cum Lauri nitidæ Herbarii Hamiltoniani in Horto Calcuttano decerptum exemplum omnino ejusdem arboris sit, cujus alterum ramulum, *Lauri Malabathricæ* nomine inscriptum, Herbarium Wallichianum monstrat, dubia, ex his mota, non nisi triplici modo solvi possunt: primo, cum statuas, eandem arborem non solum foliis floribusque diversis, sed etiam corticis sapore, nunc caryophyllaceo nunc cinnamomeo esse præditam, quod sane legibus naturæ non consentaneum; secundo cum aliâ ætate caryophyllum, aliâ autem cinnamomum olere posse concedas; tertio denique, quod mihi quidem ante omnia placet, quærendo, numne arbores diversæ, eodem nomine inscriptæ, in amplissimo isto horto exstiterint, quarum surculi et ramuli vario tempore in Herbaria et Hortos delata, difficultates istas, non nisi in loco natali resolvendas, excitavere.

7. *Cinnamomum Zeylanicum*; ramis subtetragonis glabris, foliis ovatis ovato-oblongis in acumen obtusum productis triplinerviis trinerviisve subtus reticulatis glabris, superioribus minoribus, paniculis terminalibus axillaribusque pedunculatis, floribus cano-sericeis, laciniis oblongis medio deciduis.

α. foliis subcordatis ovatis acumine obtuso.—*Cinnamomum Zeylanicum* var. β Blume Bydr. p. 569. *Laurus Cinnamomum* β Nees ab Esenb. Fratr. Disp. de Cinnam. p. 50. t. 2. f. B.

β. foliis ovatis vel ovato-oblongis obtusis aut brevissime obtusissimeque cuspidatis; (1.) cortice odorato cinnamomeo.—*Cinnamomum Zeylanicum* Blume Bydr. p. 568. Fr. N. ab E. Handb. d. Med. Pharm. Bot. II. p. 420. *Laurus Cinnamomum* N. ab E. Frr. Disp. p. 48. t. 2. f. A cum omnibus synonymis. *Persea Cinnamomum* Spr. Syst. Veg. p. 267. n. 1. Link Handb. I. p. 388. *Laurus Cinnamomum* Wall. Cat. n. 2573 B. ex parte. *Laurus nitida* Hb. Heyn. Wall. Cat. n. 2582 B. *Laurus Malabathrum* Wall. Cat. n. 2583 C. *Laurus Culitaban* Hb. Hamilt.

(?2.) cortice inodoro insipido vel vix aromatico.—*Laurus Cinnamomum* Hb. Madrasp. et Wight. Wall. Cat. n. 2573 C. D.

γ. foliis oblongis aut ellipticis apice longius attenuatis, basi acutis.—*Laurus Cassia* Hamilton in Linn. Transact. XIII. 2. p. 555 et Linn. Mat. Med. p. 64. Sp. Pl. I. p. 369. Syst. Nat. ed. Hal. a. 1760. p. 1010. Sp. Pl. ed. Willd. II. 1. p. 477, cum Karua Rheed. Mal. I. p. 107. t. 57 et aliis omnibus synonym. sub *Lauro Cassia* a N. ab E. Frr. l. c. p. 53 allatis, præter sequentia: *Laurus Cinnamomum* Lour. et Andr., *Laurus Cassia* Ait. etc. et *Laurus Malabathrum* Reinw., quæ cunctæ ad aliam speciem, *Cinnamomum aromaticum* appellandam, spectant, addendo autem synonym.: *Cassia cinnamomea sylvestris* pigrior etc. Pluk. Alm. p. 88. Tum *Laurus Cinnamomum* β *angustifolium* Roxb. Hort. Calcutt. p. 30. *Laurus Cinnamomum* Wall. Cat. n. 2573 B, ex parte. *Laurus Malabathrum* Wall. Cat. n. 2583 A, ex parte. *Laurus rigida* Wall. Cat. n. 2570. *Cinnamomum perpetuo florens* etc. Burm. Thes. Zeyl. p. 63. t. 28.

δ. floribus octofidis, staminibus fertilibus 12, staminodiis geminatis 8, interioribus 4.

Crescit var. α culta in Java insula (Blume); β spontanea in Zeylona, culta in Horto Calcutt., in Java pluribusque idoneis terris utriusque orbis tropicis, frequens etiam in hortis nostris; γ quasi spontanea "pro sylvestri tamen non habenda" (Rheed. H. Mal. v. p. 105.) in Indiæ orientalis continente, probabiliter a Belgis, cum Zeylonam in ditione tenerent, ut levioris pretii species, exteris concessa. Vidi exempla in Penang a Wallichio anno 1822, et in montibus provinciæ Sillet a F. D. lecta, et alia ex Horto Calcuttano allata. Var. δ in var. γ observavi. Floret Januario et Februario, fructum perficit Junio et Julio mensibus.

Nomen apud Bengalenses *Dar cheeni* (Roxb.).—Arbor humilis vel frutex.

Adnot. 1. Var. β. exempla inodora, cum ad normam conveniant, separari non possunt, probabiliter ætate exhausta, cum ex antiquis herbariis proficiscantur. Mirum tamen, nam Royeniana illa, quæ in Disp. de Cinnamomo descripsimus, multo vetustiora, integrâ in hunc diem gaudent virtute aromaticâ. Folia illis inodoris pleræque quinquenervia, neque vero hoc magis, ac in reliquis multis, nullâque constanti regulâ.

Adnot. 2. Exempla var. γ, sponte, vel quasi sponte, in Sillet et Penang nata, rigiditate foliorum et panicularum differunt, foliisque paullo longius acuminatis, ut fieri solet in plantis neglectis. Hæc autem maxime ad *Karuam* Rheedii accedunt, sed, si quis distinguere caractere specifico tentabit, certò in ipso opere operam perditum iri sentiet.

Adnot. 3. In Herb. Wightiano *Lauri Cinnamomi* nomine ramus exstat singularis notæ, sed flore fructuque experts . . . ad var. γ Cinnamomi Zeylanici appropinquans; in montibus Dindygul lectus. Hujus loci? *Laurus Cinnamomum* Hb. Wight. ? Wall. Cat. n. 2573 E.

Observ. Cum Disputationem de Cinnamomo conscriberemus, ante omnia id probare studebamus, Laurum, quam tunc temporis in hortis plerisque Cinnamomi nomine venditabant, Laurum Cinnamomum Linnei non esse, sed illam potius quam Laurum Cassiam declaraverant in libro, qui *Botanical Magazine* inscribitur, veram esse *Laurum Cinnamomum* Linnei. Idque re verâ sic esse, ut diximus, nunc extra omne dubium positum est. Ab altera parte, cum ea, quam in hortis L. Cinnamomum appellare consueverant, præstantissimi odoris et saporis species, Lauro, "Karua" a Rheedio dictæ, satis similis esse videretur, nobisque persuasum esset, hanc speciem hortensem ex India orientali ad nos pervenisse, collectis omnibus, quæ veteres et recentiores, præsertim a Linnei temporibus de Cassia tradidere, hanc Linneanum Laurum, Cassiam dictam, ob synonymon Rheedianum, eandem esse ac illam quam diximus, in hortis obviam, statuantes, lapsi sumus. Patet enim ex iis, quæ docte cl. Hamiltonius de ea re disseruit in Actis Linnæanæ Societatis, XIII. 2. p. 550 sqq., *Karuam* Rheedii, et *Laurum Cassiam* eorum qui hunc sequuntur, varietatem esse *Lauri Cinnamomi* Lin. seu *Cinnamomi Zeylanici* angustifoliam, in plagis continentalibus Indiæ orientalis non tam spontaneam, quam efferatam et quasi sponte nascentem. Quæ quidem multis exemplis, a Wallichio advectis, satis superque demonstrantur ipsisque verbis Rheedianis confirmantur. Neque ullum ejus speciei, quam "Laurum Cassiam Linnei" l. c. appellavimus, exemplum inter plantas Wallichianas exstat; habemus autem sicca specimina, a cl. Blumio e Java allata, quibus patet, hanc speciem, e China in Javam delatam, veram esse Cinnamomi chinensis, ab Hamiltonio l. c. laudati et perperam a Lauro Cubeba Lour. derivati matrem. Quæ cum ita sint, veterum scriptorum ante Linneum de Cassia lignea sententiæ pleræque dubiæ fiunt semperque manebunt, cum nemini constet, utrum de Cinnamomo e China inter merces allato, an potius de Cinnamomi Malabariæ indigenæ specie sermo sit. Linnei autem *Laurus Cassia*, et omnium eorum, qui a Rheedio hausere, cum var. γ Cinnamomi, quod *Zeylanicum* dixi, merito conjungitur. Novum igitur nomen invenire necesse est præstanti illi Sinensium arbori cinnamomiferæ, quam recentiores plurimis novisque dubiis vexaverunt. Nobis erit:

Cinnamomum aromaticum; ramulis angulatis petiolisque striguloso-tomentosis, foliis oblongis utrinque acutiusculis subtus arcuato-venulosis triplinerviis nervis ad apicem folii evanescentibus, paniculis angustis sericeis.—*Laurus Cassia* N. ab E. Frr. Disp. p. 53. t. 3. (excl. pll. synonym.) Ait. Hort. Kew. II. p. 427. Hornem. Hort. Havn. Suppl. p. 134. Dierb. Handb. d. Med. Pharm. Bot. p. 182. Virey Hist. Nat. des Medic. p. 163. *Persea Cassia* Spr. Syst. Veg. II. p. 267. Link Handb. I. p. 388. *Cinnamomum Cassia* Blume Bydr. p. 570. Fr. N. ab E. Handb. d. Med. Pharm. Bot. I. p. 424. *Laurus Cinnamomum* Lour. Fl. Cochinch. ed. Willd. I. p. 305. Andr. Repos. t. 595. *Laurus Malabathrum* Reinw. in litt.

Habitat in China. Vidi exempla Javanica culta, et hortensia (Europæa).

8. *Cinnamomum sulphuratum*; ramis tetragonis petiolisque ac paniculis sulphureo-sericeis, foliis ovatis ellipticisve apice brevi obtuso prominulo, triplinerviis subtus reticulatis, junioribus minutim pubescentibus, superioribus minoribus paniculis axillaribus pedunculatis, laciniis perianthii ovalibus.—*Laurus Cassia*? Hb. Heyn. *Laurus Malabathrum*? Wall. Cat. n. 2583 D. *Cinnamomum javanicum* Blume Bydr. p. 570?

Vidi exemplum ex Herb. Heyneano.—Fructum non observavi. *Cinnamomo Zeylanico* β adeo congrua species, ut vix distinguas. Diversa tamen videtur.

9. *Cinnamomum Tamala* Fr. N. ab E.; ramis subteretibus, junioribus pubescenti-scabris, foliis oblongo-lanceolatis acuminatis basi acutis glabris triplinerviis, nervo medio infra apicem enervi, paniculis subterminalibus axillaribusque pedunculatis divaricatis, perianthii campanulati laciniis obovatis acutiusculis utrinque cano-sericeis infra medium deciduis.—*Cinnamomum Tamala* Fr. N. ab E. Handb. d. Med. Ph. Bot. II. p. 426. *Laurus Tamala* Hamilt. in Act. Soc. Linn. Lond. XIII. 2. p. 555. (excl. synonym. *Lauri Cassiae* Hort. Beng., quæ ad *Cinnamomum albiflorum* pertinet.) *Persea Tamala* Spr. Syst. Veg. II. p. 268. n. 4. *Laurus Cassia* Lin. Wall. Cat. n. 2580 B. *Laurus albiflora* Wall. Cat. n. 2569 C. *Cassia cinnamomea strictiore folio, ignobiliore, cujus folium est Malabathrum seu Tamalabathrum angustifolium, in officinis frequens* Pluk. Alm. p. 89.

Clariss. Hamiltonius, teste Herbario, legit in Derwani et Gongachora, cultamque in hortis Camrupæ (Rungpur); in Sillet F. D. invenit.—Floret Martio, fructusque sub finem Aprilis et Maio mense perficit. Vidi exempla Hamiltoniana.

Nomen inter Bengalenses *Tej* (*Tadsch*).—Arbor mediocris. Corticis odor et sapor cinnamomi; foliorum caryophyllini.

10. *Cinnamomum albiflorum*; ramulis tetragonis, junioribus scabrisculis, foliis oblongis ovato-oblongis acuminatis basi acutis glabris valide triplinerviis subtus glaucescentibus, nervo medio infra apicem nervuloso, paniculis terminalibus axillaribusque subfasciculatis ramis trifloris, perianthii patentis laciniis ovali-oblongis intus staminibusque candido-sericeis infra medium deciduis.—*Laurus albiflora* Wall. Cat. n. 2569 A. et E. *Laurus Soncaurium* Hamilt. in Act. Soc. Linn. Lond. XIII. 2. p. 557, et in ej. Hb. Spr. Syst. Veg. II. p. 266. n. 20. *Laurus Cassia* Roxb. Cat. Hort. Bengal. p. 30. Wall. Cat. n. 2580 A. *Laurus triplinervia* Reinw. in litt. *Cinnamomum Cassia* Don Fl. Nep. p. 67. *Cinnamomum camphoratum* Blume Bydr. p. 571. *Niehe Coronde*, Hist. Cinn. in Act. Ac. N. Cur. vol. I. App. p. 5. N. ab E. Frr. Disp. de Cinn. p. 64. t. 6. f. 6 (lc. ex Act. Ac. N. C. repetita.)

β. foliorum nervis lateralibus plerumque prope basin bifidis, nervulo tenui utrinque juxta basin accedente.—*Laurus albiflora* Wall. Cat. n. 2569 B. et D. *Laurus Soilyana* Hamilt. l. c. p. 558. Spr. l. c. p. 266. n. 22.

Creascit in montibus Nepalæ superioribus ad Cosam fluvium (Hamilt.); Palpa Nepalæ et montes Majukani (ejusd. Herb.); in Horto Calcuttano, a. 1796 ex India allata (Roxb.). Var. β ab Hamiltonio Rungpuria in horto lecta est et a Kamrup in Srinaghur, ab utroque absque flore et fructu.—In Javæ insulæ provinciarum occidentalium sylvis montanis cl. Reinwardt et Blume invenerunt. Floret a Februario in Aprilem usque; fructum fert Julio et Augusto mensibus (Roxb.).—Nomen apud Bengalenses *Tej* (Roxb.).—Fructum non vidi.—Arbor speciosa, *C. Tamalæ* admodum similis, sed certò diversa. Cortex fuscus, in ramis adultis (et radice) crassus, odore et sapore camphorato acris, in ramulis juvenilibus singulari, e camphora cum cinnamomo mixto dulci et mucilaginoso.

Adnot. 1. Var. β plantam juvenilem vel ramos steriles vegetosque sistit.

Adnot. 2. A *Cinnamomo Tamala* præter folia floresque differt odore et sapore corticis.

11. *Cinnamomum dulce*; ramulis teretibus glabris, foliis oblongis obtuse acuminatis basi acutis glabris concoloribus triplinerviis, nervis lateralibus costâque apicem versus venuloso-ramificatis tenuibus, paniculis axillaribus terminalibusque ramis trifloris, perianthii patentis laciniis ovali-oblongis medio deciduis.—*Laurus dulcis* Roxb. Hort. Beng. p. 30. Wall. Cat. n. 2581 A, B. *Cinnamomum chinense* Blume Bydr. p. 569. *Laurus Burmanni* N. ab E. Frr. Disp. de Cinn. p. 57. t. 4. f. 1 (descriptio quantum ad exemplum Hb. Willdenowiani respicit.)

Habitat in China. Vidi exemplum Horti Calcutt. cum Roxburghiano Herbario collatum; alterum in Herb. Willdenowiano.—Simile habitu *Cinnamomo albifloro*. Corticis sapor et odor cinnamomi debilissimus.

Adnot. 1. Inter species "foliis alternis" præditas posuit hoc dulce *Cinnamomum Roxburghii* in Horto Bengalensi, l. c., quod quidem

non magis isti, quam pluribus reliquis, v. c. *C. albifloro* et *C. Tamalæ* convenit. Oppositiones foliorum in his, cunctisque CINNAMOMI generis arboribus ejusmodi sunt, ut ubicunque lætior vegetatio intervalla nodorum augeat, ipsa etiam intervalla foliorum eorundem parium, in iis, quæ opposita dicuntur, ad minimum spatii redacta, in conspectum rursus veniant et primum quidem folia per paria sibi proxime conjuncta, mox autem, ulterius incremente nisu partes distrahendi, alterna communi sensu et fere æquis intervallis ea distantia procedant, diverg. modo $\frac{1}{3}$, modo etiam $\frac{2}{3}$.

Adnot. 2. In Disputatione de Cinnamomo l. c. duas diversasque species errore confundimus, scilicet *Cinnamomum hoc dulce* Roxburghii, ex Herbario Willdenowiano desumptum, et *Cinnamomum Kiamis* jam exponendum.

Quæstionem de Cinnamomo perpetuo florente Burmanni nunc, ut plane otiosam mittimus, etsi magis probabile nobis videatur, hunc Thes. Zeylanici locum ad *Cinnamomum Zeylanicum* γ. *Cassiam* trahi posse. Flores 5-fidos dictos nihil moror. Sed utrum fructus, inferi et umbilicati dicti ad exemplum, quod l. c. floribus gaudens depictum exhibetur vere referendi, an casu fuerint intrusi (cum planta non nisi in herbario observata sit a Burmanno), dirimi jam non potest.

Cinnamomum Kiamis; ramulis acute tetragonis, novellis pubescenti-scabris, foliis ovali-lanceolatis utrinque acutis glabris subtus cæsioglaucis triplinerviis nervis lateralibus costâque mediâ apicem versus venuloso-ramificatis, paniculis axillaribus trifidis paucifloris, perianthii patentis laciniis oblongis supra basin deciduis.—*Cinnamomum Burmanni* Blume Bydr. p. 569. Fr. N. ab E. Handb. d. Med. Pharm. Bot. II. p. 424. *Laurus Burmanni* N. ab E. Frr. de Cinnam. p. 57. (ex parte), t. 4. f. 2.

Habitat in sylvis montanis provinciarum occidentalium Javæ (Blume). Floret Decembri.—Nomen apud indigenas, *Kiamis*. Corticis crassi fusci odor et sapor singularis, dulcis, adstringens, Alyxiæ subsimilis.

Adnot. 1. *Cinnamomum pauciflorum*, proxime isti confine, differt foliis latioribus longe cuspidatis simpliciter triplinerviis, pedunculis subtrifloris, cupulâ fructus truncatâ.

Adnot. 2. Ex hac arbore *Corticis Massoi* altera species colligitur, secundum Waitzium, Mater. Med. Javan. ed. Fisch. p. 21.; sed prior illa hujus corticis species, quam Rumphius describit (Herb. Amb. II. p. 62.), diversæ est arboris, in Nova Guinea crescentis, nec Cinnamomi generis.

12. *Cinnamomum pauciflorum*; ramulis quadrangularibus glabris, foliis elliptico-ovatis longe cuspidatis glabris subtus glaucis valide triplinerviis nervis apicem versus evanescentibus, pedunculis axillaribus compressis trifloris, perianthii patentis laciniis oblongo-cuneiformibus juxta basin deciduis.—*Laurus pauciflora* Wall. Cat. n. 2579.

?β. Foliis angustioribus, exquisite cuspidatis.—*Laurus Tazia* Hamilt. in Act. Soc. Linn. Lond. XIII. 2. p. 557. Spr. Syst. Veg. II. p. 266. n. 21. *Laurus albiflora* Wall. Cat. n. 2569 F.

Creascit in Sillet (F. D.). Var. β prope Nathpur et in montibus Nepalæ inferioribus ad Cosam fluvium (Hamilt.).—Frutex? Cortex fuscus, odoris aromatici et saporis debilis, *Cinnamomi Kiamis* similis.

Adnot. 1. A *Cinnam. Kiamis*, cui soli propinquum, quibus differat, sub illo invenies.

Adnot. 2. Var. β, quæ probabiliter hujus est loci, sine fructificatione a cl. Hamiltonio relata est atque descripta.

13. *Cinnamomum Culitlawan*; ramis teretibus glabris, foliis ovato-oblongis attenuato-acuminatis glabris subtus glaucis triplinerviis, costâ infra apicem nervulosâ, paniculis axillaribus paucifloris pubescenti-canis, perianthii campanulati laciniis ovalibus medio deciduis.—*Laurus Culitlawan* Roxb. Hort. Beng. p. 30. N. ab E. de Cinn. Disp. p. 61 (ob synonym., quæ ad hanc speciem omnia). Lin. Sp. Pl. ed. Willd. II. p. 478. Lin. Mant. p. 237. Mat. Med. p. 208. Dierb. Med. Ph. Bot. p. 154. Wall. Cat. n. 2577. Hamilt. in Act. Soc. Lin. Lond. XIII. 2. p. 554. Spr. Syst. Veg. II. p. 265. n. 2. *Laurus Caryophyllus* Lour. Fl. Cochinch. ed. Willd. I. p. 307. n. 3. *Cortex caryophylloides* Rumph. Herb. Amb. II. p. 65. t. 14. Valent. Ind. litt. c. 24. p. 450. Ephem. Acad. Nat. Cur. Dec. II. Ann. I. p. 55. *Cinnamomum Culitlawan* Reinw. in litt. cf. N. ab E. Disp. de Cinnam. p. 62, (excl.

synon. *Syndoc* Rumph.) Crawford Hist. of the Ind. Archip. I. p. 512. Fr. N. ab E. Handb. d. Med. Ph. Bot. II. p. 429?

Crescit in Amboinæ insulæ districtu Leytimora circa pagos Saya, Rutton et Ema; in parte australi magnæ Ceramæ, in sinu Elipaputi usque ad Keffang, (quarum tamen cortex non tam præstans); in insula quoque Molucca, Batsjan dicta, ut et in Papuanis insulis, (quarum cortex Amboinensi prævalet fervore); magnâ etiam copiâ inveniuntur arbores in insulis Key at Aru; in ora orientali Celebis in tractu Caudipan; item in Sumatra circa Palimbang, et in Borneo circa Succadana. Ex Java itidem Culitlawan advehitur, et puto, corticem esse *Syndoc*; in Solora inventus quoque hic cortex, sed sapore itidem differens ab Amboinensi, ut et in Mindanaou (Rumphius); in Cochinchina (Loureiro); in Java insula? (Reinwardt). Vidi exemplum cultum ex Horto Bengalensi, in quem a Christophoro Smith a. 1800 e Moluccis invectum est (Roxb. l. c.).—Floret (in Horto Calcuttano, ut in Amboina,) Martio et Aprili mensibus; fructus decidunt Augusto (Roxb., Rumph.).—Arbor permagna.

Nomen Malaice *Culitlawan*, quasi diceret Culit-lawan, per abbreviationem Culit-Buguliwan, h. e. cortex caryophylleus, ob odorem, quem fert. Amboinice dicitur *Salackal*, et *Salackar*, Javani quidam hanc quoque vocant *Sindoc*. Ceterum *Tedjo* vocatur a Ceram-Lauwerensibus et *Eyck* in Aru Haumo (Rumph.). *Poheree-lawan* Malaicâ linguâ vocari (Roxburgh l. c.).

Adnot. *Cinnamomum Culitlawan javanicum* cum foliorum figurâ recedat, cum suis synonymis ut dubium subjunxi, eoque magis, cum Rumphio differre Culitlawan Javanensium ab Amboinensi persuasum fuisse videatur, et *Cinnamomum Culitlawan* Blum. Bydr. p. 571, ut e specimine (sterili eo quidem), colligo, aliena sane a nostra sit species foliis oblongo-lanceolatis, basi eximie cuneatis, alte triplinerviis diversa, magisque ad *Cinnamomum eucalyptoides*, quod dixi, accedens. In tanta autem, quæ inter Laurinas versatur foliorum inconstantia, odorum et saporum, a solo situque certò certius pendendum, leviores discrepantie ad dubia illa confirmanda solæ vix sufficiunt, nisi graviora argumenta, ex aliis forte deducenda, subsidia illis præbeant.

Cinnamomum Sintoc Blum. Bydr. p. 571, quod *Sindoc* Rumphii, solis jam paniculis laxis fusco-tomentosis satis distinguitur.

14. *Cinnamomum Heyneanum*; ramulis teretibus petiolisque pubescentibus, foliis lanceolatis acuminatis glabris subtus glaucis triplinerviis

viis nervis lateralibus apicem versus evanescentibus, pedunculis axillaribus subterminalibusque trifidis, perianthii laciniis juxta basin suturatis persistentibus.—*Laurus Heyneana* Wall. Cat. n. 2576.

Habitat . . . Vidi exemplum Herbarii Heyneani, cum calycibus fructus fructuque maturo.—*Cinnamomo vimineo* simile.

Adnot. Quoad folia species hæc cum *Cinnamomo* genere eximie congruit, et cum sutura quoque ad basin laciniarum perianthii accedat, dubium non videtur, quin revera sit *Cinnamomi* species.

Species dubiæ.

? 15. ? *Cinnamomum vimineum*; ramulis tetragonis petiolisque pubescentibus, foliis lanceolato-oblongis apice subattenuatis obtusis basi acutis glabris subtus glaucis valide trinerviis nervis lateralibus apicem versus evanescentibus, pedunculis infraterminalibus (axillaribusque?) trifloris (?).—*Laurus viminea* Wall. Cat. n. 2578. Lecta in Penang a G. Porter, absque floribus, sed pedunculis floribus exutis.

—Frutex?

? 16. ? *Cinnamomum caudatum*; floribus fasciculatis, fasciculis axillaribus pedunculatis, foliis ovatis caudato-cuspidatis trinerviis.—*Laurus caudata* Wall. Cat. n. 2603.

Habitat in Napalia, ubi a Wallichio a. 1822 inventum est.—Arbor?

Adnot. 1. Species primo intuitu e foliis cuspidatis floribusque in pedunculo communi fasciculatis distinguenda.

Adnot. 2. Singularis est in hac specie gemmarum ex ramorum axillis procreatio. Scilicet e folii axilla ramus oritur, simul cum folio nascens citissimoque progressu assurgens, simulque brevi spatio supra angulum, quem ille cum ramo primario describit, gemma prodiit parva, quiescens, tomento induta, quæ eminentiam rami, folium cum suo ramulo ferentem superne claudit.

Adnot. 3. Cum fructus non innotuerit, non liquet, an CINNAMOMI sit generis, an potius CAMPHORÆ.

Species aliena.

Laurus ?? *smilacifolia* Wall. Cat. n. 2572 in Penang a G. Porter lecta, non hujus est familiæ, sed propter stipulas caducas et reliquum habitum probabiliter Buttneriaceis, (Sterculiæ forsani generi) vel Tiliaceis adscribenda.

Species suspecta.

Laurus ?? *lucida* Wall. Cat. n. 2590. Quercini potius esse videtur generis. Conf. ? *Alseodaphne lucida*, in antecedentibus descripta.

ACACIA MOLLIS. Tab. 177.

ARBOREA, erecta, inermis; foliis bipinnatis pinnisque multijugis, mollissimè villosis; pinnulis semiovatis, acutis; glandulâ concaviusculâ supra basin petioli, duabusque inter ultimas pinnas; capitulis fasciculatis, longè pedunculatis, corymbosis; filamentis longissimis.

Nomen monticolarum, *Lakkey*.

Colitur in hortis convallis magnæ Napaliæ, florens Aprili et Maio.

ARBOR procera et speciosa, umbrosa. RAMI cylindrici, inermes, calloso-punctulati, fusi; superiores subflexuosi, tenellique densè villosi. FOLIA alterna, patentia, approximata, ferè pedalia, bipinnata, 4—8-juga, utrinque obsita villis adpressiusculis, copiosis, pallidè ferrugineis, mollissimis et sericeis. PETIOLUS 2-pollicaris, gracilis, basi tumidus, suprâ plano-sulcatus, abiens in rachin gracilem, sulcatam; glandula parva, sessilis, orbiculata, concava supra basin petioli, aliæque duæ ad apicem rachis, inter pinnarum juga duo extima. PINNÆ oblongæ, 5-pollicares, exactè oppositæ, ferè sessiles. PINNULÆ 14—18-jugæ, dimidiato-ovatae, oblongæ, cuspidato-acutæ, basi semicordatâ hinc gibbosæ, indè acutæ, utrinque decrescentes, mediæ lineas 8 longæ, mollissimè villosæ, subtus parùm reticulatæ, sessiles in rachis partiali filiformi, recta. STIPULÆ oppositæ, parvæ, lineari-lanceolatæ, pubescentes, valdè deciduæ. CAPITULA magna, rosea, nunc alba, longè pedunculata, fasciculata, axillaria foliorum supremorum, terminaliaque, corymbum formantes terminalem amplam. PEDUNCULI graciles, teretes, villosi, 2—4-pollicares. FLORES subsessiles, majusculi. CALYX oblongus, 5-dentatus, pubescens, nunc lateralitè fissus. COROLLA flavescent, subinfundibuliformis, calyce triplè longior, pubescens; limbus divisus in lacinias 5 patulas, lanceolatas, acutas. STAMINA plurima, patentia, recta, rubicunda, lævia, sesquipollicaria; filamenta capillacea, basi in tubum corollæ longitudinem æquantem connata; antheræ parvæ, glabræ. OVARIUM lineare, glabrum; stylus longitudine staminum, rufus; stigma minutum.

This is a very large and shady tree with fine rose-coloured flowers, changing sometimes into white with the ends of the filaments tinged red. It is commonly cultivated in the gardens at Katmandu, but there is no doubt that it is also a native of the neighbouring mountains, although I have in vain searched after it.

Plate CLXXVII. Fig. 1. A detached flower. 2. The same, dissected.

SAURAUJA NAPALENSIS. Tab. 178.

Saurauja napalensis Decand. Prodr. 1. p. 526.—Suprà, p. 40.

Crescit in omnibus partibus Nepalæ tam inferioris quàm superioris, florens sub pluviis, fructifera Novembre.

ARBOR mediocris altitudinis. RAMI cylindrici, fusci, punctati; exteriores novellique densè vestiti tomento copiosissimo, pallidè ferrugineo, furfuraceo, solubili, intermixto squamis fuscis, subulatis, acuminatis. FOLIA sparsa, patentia, approximata, oblonga, nunc elliptica, acuminata, cuspidato-serrata, basi integra et rotundata, dodrantalia, pedalia vel ultrà; suprà glabra, vel pilis raris adpressis conspersa, obliquè sulcata, subtùs tenuitè ferrugineo-tomentosa, nervis plurimis, conspicuis, obliquis, parallelis, approximatis, ad marginem arcuatis, costâ carinatâ, squamulosâ, venis reticulatis. PETIOLUS pollicaris, tomentosus. CORYMBI axillares, solitarii, longè pedunculati, folio breviores, ovati, squamuloso-tomentosi. PEDUNCULUS communis cylindricus, 5-pollicaris; *partiales* alterni, parcè ramosi. FLORES majusculi, rosei; cætera ut in *S. fasciculata* (vide suprà, p. 40.).

Plate CLXXVIII. Fig. 1. 2. & 3. Flower. 4. 5. Corolla, opened. 6. Pistil. 7. Ovary, opened.

BLACKWELLIA NAPALENSIS. Tab. 179.

Blackwellia napalensis Decand. Prodr. vol. ii. p. 54.

Habitat ad Balajee in convalle Nepalæ magna, florens Augusto; fors etiam in montibus Sillet vicinis.

ARBOR magna. RAMULI grisei, punctis creberrimis, callosis, pallidis notati, cum foliis glaberrimi. FOLIA alterna, approximata, patentia, ovata, acuminata, grossè et obtusè serrata, 5-pollicaria, coriacea, suprà nitida, subtùs nervoso-venosa, reticulata, *petiolis* insidentia unguicularibus, suprà sulcatis. STIPULÆ axillares, oppositæ, minutæ, lineares, caducissimæ. INFLORESCENTIA axillaris, folio paullò brevior, ovata, attenuato-acuminata, brevè pedunculata, ramosa, constans *racemis* brevibus, paniculatis. PEDUNCULI teretes, pubescentes. FLORES parvi, alterni, brevissimè pedicellati, albidii, foetidi, cano-villosi. CALYX patens, divisus in lobos 12 vel 14 duplici ordine dispositos; oblongos, obtusos, ciliatos, interioris seriei exterioribus duplò latiores, subspathulatos. STAMINA lobis calycis interioribus numero æqualia, iisdemque opposita, patentia, glabra; *filamenta* capillacea, glandulis minutis, ovatis alternantia. ANTHERÆ geminato-capitatae, retusæ, biloculares; *loculi* globosi. OVARIUM semiadnatum, villosum, infernè oblongum, supernè ovatum, 1-loculare; *ovula* 8—16 pendula, placentis quatuor parietalibus, linearibus regularitèr inserta. STYLI 4, teretes, breves, villosuli. STIGMATA obtusa.

I have found this tree nowhere except at a place called Balajee, in the great valley of Nipal, where it attains a very large size. Together with *Blackwellia spiralis*, *B. foetida* (*Ludia foetida* Roxb.) and *B. propinqua* (a species found in Penang), our tree belongs to the same genus with Loureiro's *Astranthus*, according to the observations of the illustrious author of the Botanical Appendix to Tuckey's Expedition to Congo. The three-celled anther of which Loureiro speaks, is nothing else than an ordinary bilocular anther, of which the globular cells are rather more distant towards the top than at the base, in consequence of a slight dilatation of the apex of the filament, giving the interstice somewhat the appearance of a third cell.

Plate CLXXXIX. Fig. 1. 2. Flower. 3. Flower, opened. 4. Ovary, opened.

MUSSAENDA MACROPHYLLA. Tab. 180.

Mussaenda macrophylla, Wall. in Roxb. Flor. Ind. vol. 2. p. 228.

Habitat in montibus Nagarjun et Chandaghiri Nepalæ, florens sub pluviis, fructifera Novembre, Decembre.

Plate CLXXX. Fig. 1. Flower. 2. Calyx. 3. Corolla, opened. 4. 5. Ovary, opened.

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X

CERASUS ACUMINATA. Tab. 181.

FOLIIS lanceolatis, acuminatissimis, remotè serratis, floribusque glaberrimis, subtùs nunc sparsè glandulosis, basi petiolisque nudis; racemis axillaribus, solitariis vel fasciculatis, foliis paulò brevioribus.

Nomen Parbutteum, *Aroo*.

Habitat in montibus Napaliæ, florens mensibus anni primis.

Habitat in montibus Napanae, norens mensibus annis
ARBOR 20—30-pedalis, ramosissima, omnibus partibus glaberrima. RAMULI graciles, fusi. FOLIA alterna, approximata, patentia, perennantia, lanceolata, acuminatissima, remotè et acutè serrulata, basi rotundato-acutiuscula, lævia, lucida, 3—5-pollicaria, suprà atroviridia, subtus reticulata, costâ elevatâ, gracili, sæpiùsq; glandulis aliquot parvis, excavatis inter nervos sparsis; petiolo suffulta brevi, profundè sulcato, eglanduloso. STIPULÆ lineares, fugacissimæ. RACEMI axillares, solitarii, vel pauci fasciculati, subnutantes, cylindrici, attenuati, longitudine ferè foliorum, glaberrimi, brevè pedunculati. FLORES mediocres, ex flavido albi, remotiusculi, sparsi, patentes. PEDICELLI semiunguiculares, teretes, basi bracteoid minutâ, ovatâ, ciliatâ, carnosâ, caducâ. CALYX turbinatus, flavescent, limbo 5-dentato, intus villosulo. PETALA ovata, acuta, suberispulata, patentia, calyce ferè duplò longiora. STAMINA 15 vel 20, glabra, petalorum longitudine. OVARIUM ovatum, sericeo-villosum, 1-loculare; ovula 2 e fornice loculi pendulâ; alterum sphacelato-abortivum. STYLUS filiformis. STIGMA subcapitatum. DRUPA ovata, lævis, putamine glabro, tenui; maturam haud vidi.

Plate CLXXXI. Fig. 1. 2. Flower. 3. The same, dissected.

MAGNOLIA INSIGNIS. Tab. 182.

Magnolia insignis, Wall. Tentam. Floræ Napalensis Illustrat. v. 1. p. 3. t. 1.

Nomen Nevarense, *Seete.*

Habitat in convalli Napaliæ ad Sankoo adque cacumen montis Sheopur, altitudine pedum 6,000 ad 10,000.

Floret mensibus Aprilis et Maii; fructus maturos profert Octobre.

Although a figure of this *Magnolia* has been already published in my *Tentamen Floræ Nepalensis*, I venture to add a plate of it in the present work, as the means which I had in India were very inadequate for doing justice to this truly superb tree. It grows in great abundance at a place called Sankoo, in the great valley of Nipal, and sparingly on Mount Sheopur, towards its summit. I have not met with it anywhere else; nor have I ever heard of its growing in any of the other mountainous parts of Hindustan. It is in full blossom in April and May, at which period it is impossible to behold a more magnificent object. The flowers are produced in vast numbers; they are very beautiful, large, and fragrant, of a yellowish white colour, with the apex of the petals pink, and the reflexed leaves of the calyx brownish red, and elegantly reticulated with pale green nerves and veins. The capsules are purple, and disposed in large, erect, oblong cones, from which the scarlet seeds hang down in all directions, being suspended on delicate white threads. The leaves are dark green and leathery, and form a very umbrageous crown; in winter, from November until February, they fall off, leaving the branches quite naked.

The tree attains a vast size, its trunk frequently measuring four or five feet in diameter. If it could be brought from the elevated region in which it grows on Sheopur, it would no doubt admit of being acclimated in England; an event which its beauty renders extremely desirable, and which I hope to live to accomplish. The wood is pale yellow, and close-grained.

For a full description of the tree I must refer to the work quoted before.

Plate CLXXXII. Fig. 1. Stamens and pistils. 2. Pistils, the stamens being removed. 3. Two detached stamens. 4. 5. Detached pistils. 6. The same, opened. 7. Cone of ripe capsules. 8. A detached capsule, which has burst open. 9. Seed. 10. 11. The same, dissected. 12. The same, after the pulpy part has been removed. 13. 14. Stipules.

BIGNONIA AMCENA. Tab. 183.

ARBOREA, foliis tripinnatis, trijugis, foliolis lanceolatis, acuminatis, integerrimis, laevibus; paniculâ terminali, trichotomâ; calyce obtusè trilobo, corollæ limbo puberulo; capsulâ cylindricâ, gracili, spirali.

Habitat in Mauritio; inde in Hortum Calcuttensem a Dom. Carolo Telfair introducta anno 1818. Floret a mense Novembris usque ad Maium; fructus fert fine temporis calidi.

ARBUSCULA ramosa. RAMI cylindrici, punctis callosis plurimis asperi; *juniores* alternatim complanati, petiolique cano-furfuracei. FOLIA patentissima, opposita, magna, sesquipedalia, laevissima, bipinnato-decomposita, basi nempè tripinnata, circumscriptione triangulari-ovata, petiolata, 3—4-juga; *foliola* 3-juga, petiolata, inferiora impari-pinnata, 2-juga. FOLIOLA lanceolata, acuminata, integerrima, basi attenuato-acuta, margine levitè recurvata subundulataque, coriacea, lucida, 3—5-pollicaria, suprà atro-viridia, subtùs costà albicante, gracili, nervis suboppositis, capillaceis, arcuato-anastomosantibus. PETIOLUS communis palmaris et ultrà, teres, basi valdè incrassatus; *rachis* gracilis, suprà plana, ad insertionem pinnarum articulata; *petioli* foliolorum longitudine varii, unguiculares vel semiunguiculares, apice articulati. STIPULÆ nullæ. PANICULA terminalis, lato-pyramidata, brachiata, trichotoma, laxiuscula, glaberrima, nuda. PEDUNCULI oppositi, punctati. FLORES magni, bipollicares, fragrantissimi, dilutissimè flavicantes, intùs aurantiaci, longiusculè pedunculati, subcorymbosi, nutantes. CALYX coriaceus, subcylindricus, ferè pollicaris, pedicello brevior, versùs os 2- vel 3-lobum parùm dilatatus; *lobi* inæquales, breves, rotundato-obtusi, margine membranacei et emarcescentes, tubo corollæ adpressi. COROLLÆ *tubus* e basi angusta ampliatus et campanulatus, calyce plus duplò longior; *limbus* patens, inæqualitè 5-lobus; *lobi* subrotundi, pubescentes, crenulato-ciliati, crispatuli, inferiores 2 paullò minores; *faux* ampla, striis aurantiacis ornata. STAMINA versùs latus tubi inferius depressa, vix faucem attingentia; *filamenta* curva, teretia, ad insertionem supra basin contractam tubi villis hyalinis, capitato-glandulosis vestita, cæterùm glabra; *stamen quintum, sterile*, subulatum inter inferiora. ANTHERÆ *locula* gracillima, longiuscula, admodum divaricata, ad juncturam cuspidulâ communi subulatâ aucta. OVARIUM oblongum, lævè, disco amplo, carnoso basi cinctum; *stylus* teres, longitudine ferè staminum; *stigma* ovatum, bilabiatum. CAPSULA gracilis, cylindrica, pendula, parùm spiralis, pedalis vel sesquipedalis, pennam anserinam crassa, ferruginea, lævis, basi vestigio annulari insertionis calycis dilapsi notata; 2-locularis, 2-valvis. SEMINA plana, utrinque terminata alâ tenuissimâ, oblongâ, albâ, *placentæ* liberæ, fragili, cylindricæ adplicata, cum alis pollicem dimidium emetientia.

For the introduction of this most beautiful species of *Bignonia*, the Honourable Company's Botanic Garden is indebted to Charles Telfair, Esq. of the Mauritius, one of the most amiable and excellent of men, in whom during twenty years I have had the happiness of possessing an intimate and esteemed friend, whose name will always rank very high among the most liberal and most enlightened benefactors of Indian botany and horticulture. The tree is a native of the Mauritius, originally perhaps of Madagascar: in Bengal, where it thrives luxuriantly, it forms a small but truly ornamental tree, on account of its flowers and foliage, the former of which are exquisitely fragrant. It has also been introduced into the hothouses in England, but as yet, I believe, it has not flowered here.

Plate CLXXXIII. Fig. 1. 2. Calyx and corolla, opened. 3. Ripe capsule. 4. A section of the same. 5. Placenta, with seeds attached. 6. A detached seed. 7. Outline of part of a leaf.

POLYGALA PERSICARIÆFOLIA. Tab. 184.

Polygala persicariæfolia Decand. Prodr. v. 1. p. 326.

Crescit in sylvis montanis convallis Napaliæ, florens fructiferaque sub pluviis. In Kamaon invenit Robertus Blinkworth. In Herbario Heyneano asservantur specimina nomine *Polygalæ* inscripta, sed absque patriæ indicatione.

PLANTA herbacea, gracillima, adscendens, ferè simplex, palmaris, pedalis vel sesquipedalis. RADIX parva, fibrosa. CAULIS tenerrimus, teres, pilis brevibus pubescens, infernè nudus, simplex vel aliquando basi mediove in *ramos* aliquot integros divisus, apice sæpius bifidus. FOLIA sparsa, patentia, lineari-lanceolata, cuspidato-acuminata, ferè sessilia, membranacea, integerrima, obsoletè repandula, 2—3-pollicaria, ciliata, suprà glabra, subtùs puberula. RACEMI oblongi, 3-pollicares, multiflori, pedunculati, terminales, vel e divisura caulis terminali, erecti, solitarii. FLORES parvi, purpurei, pedicellati; *pedicelli* basi tribracteolati, *rachisque* pubescentes. CALYCIS *foliola* exteriora lanceolata; *alæ* magnæ, foliaceæ, pallidæ, flavicantes, rotundato-obovatæ, elegantè reticulato-venosæ. COROLLA alis parùm brevior, apice cristata. CAPSULA obcordata, ciliata. SEMINA oblonga, sericeo-pilosa.

Plate CLXXXIV. Fig. 1. 2. Flower. 3. Corolla.

POLYGALA CROTALARIOIDES. Tab. 185. (fig. superior.)

Polygala crotalarioides, Hamilt. ex Decand. Prodr. v. 1. p. 327.

Polygala capitata, Herb. Hamilt.

Crescit in sylvis montium Napaliæ, florens sub pluviis. In Kamaon, Blinkworth. In Sukanaghur, Hamilton.

PLANTULA decumbens, vel suberecta, pilis canis pubescens, nunc omnibus partibus densè pilosa. RADIX perennis? subfusiformis. CAULES aliquot simplices, teretes, 6-pollicares, in varietate nana (e Kamaon missa) bipollicares. FOLIA approximata, sparsa, patentia, cuneato-obovata, obtusa, vel cuspidulata, integerrima, deorsum attenuata, basi acuta, subsessilia, utrinque pilis paucis, depressis conspersa, ciliata, 2-pollicaria, subtus glaucescentia. PETIOLUS brevissimus, vix ultra semilineam emetens, teres, crassiusculus. FLORES parvi, purpurei, densè dispositi in racemos laterales vel subaxillares, ovatos, nunc umbelliformes, folio dimidio breviores, ferè pollicares, sessiles. PEDICELLI pilosi, brevissimi, suffulti bracteolis 3 lanceolatis, pilosis, persistentibus. CALYCIS foliola 3 exteriora lanceolata, ciliata; alæ ovatae, ciliatae, basi acutæ. COROLLA densè penicillato-cristata. CAPSULA reniformi-obcordata, copiosè ciliata, lateribus vesiculosis. SEMINA cano-villosa.

Plate CLXXXV. (the upper representation). Fig. 1. Flower. 2. The same, enlarged. 3. The same, opened. 4. Stamens. 5. Carina, with its crest. 6. Capsule.

ARGOSTEMMA VERTICILLATUM. Tab. 185. (fig. inferior.)

Argostemma verticillatum Wall. in Roxb. Flor. Ind. v. 2. p. 325.

Habitat ad Mareko montis Sheopur Napaliæ, florens mensibus Julii et Augusti.

A detailed description of this neat little plant has been published by me in 1824, in Roxburgh's work just quoted.

Plate CLXXXV. (the lower representation). Fig. 1. 2. Flower, enlarged. 3. Calyx, opened. 4. Corolla, opened. 5. Stamens. 6. Ovary, opened.

STAUROGYNE.

CALYX 5-partitus, 3-bracteatus, lobis aristato-acuminatis, inæqualibus. Corolla tubulosa, limbo 5-loba. Stamina 4, inclusa, didynama (cum rudimento quinti?), antherarum loculis discretis, reflexo-parallelis. Ovarium disco carnosio insidens, biloculare, polysporum; ovula axi adfixa. Stylus gracilis. Stigma infundibuliforme, trilobum; lobi subulato-acuminati, laterales breviores, divaricati. Fructus . . .

Classis Linneana: *Didynamia Gymnospermia*.

Ordo naturalis: *Acanthaceæ*?

Habitus: Herba carnosae, erectae, parè ramosa, foliis subtus argenteis, floribus racemoso-capitatis, terminalibus.

STAUROGYNE ARGENTEA. Tab. 186.

FOLIIS oblongis, sepalis bracteisque scabris.

Crescit in Sillet, florens sub pluviis. Invenit F. De Silva.

PLANTA erecta, brevis. RADIX ratione plantæ magna, perpendicularis, sublignosa, fibras emittens plures, horizontales, pubescentes. CAULIS semipedalis, carnosus, cylindricus, pilosulus, ætate glaber, nunc aliquot ex eadem radice. RAMI pauci, oppositi, teretes, breves, simplices. FOLIA opposita, patentissima, interstitiis ter pluriesve longiora, lanceolato-oblonga, acutiuscula, basi subacuta, integerrima, vel obsoletè crenulata, 3—4-pollicaria, subcarnosa, suprà glabra, punctis creberrimis minutis obsita, subtus argenteo-alba, subnitida, secus vasa puberula, costâ elevatâ, nervis alternis, ad marginem obliquè excurrentibus, venis capillaceis, reticulatis. PETIOLUS carnosus, teres, suprà sulcatus, folio dimidiò triplòve brevior, basi lineolâ elevatâ ad oppositum migrans. FLORES subsessiles, aliquot dispositi in racemum brevem, subcapitatum, terminalem, brevè pedunculatum, pubescentem. CALYX 5-phyllus; foliola erecta, inæqualia, linearilanceolata, trinervia, margine nervisque subpiloso-scabra, desinentia in aristam longam, capillaceam, scabram, in planta adulta ferè pollicarem, rufescentem. BRACTEÆ tres infra calycem, cujus laciniis simillimæ sed parùm minores. COROLLA tubulosa, calyce vix longior, glabra, ferè pollicaris; tubus amplus, pallidè violaceus, basi flavidus leviterque contractus; limbus brevis, patens, 5-lobus, purpureus; lobi subrotundi, obtusi, inferiores 2 parùm minores et disco albidii; faux nuda, pervia. Stamina 4, supra basin tubi inserta, didynama; filamenta filiformia, puberula; anthera albidæ, 2-loculares, parùm nutantes; loculi retroflexi, paralleli, basi tantum connectivo brevi, clavato unitæ. Rudimentum staminis quinti inter inferiora filamenta? OVARIUM disco carnosio, brevi insidens, glabrum, oblongum, 2-loculare; ovula plurima, cuneiformi-cylindrica, angulo recto e placenta axili parallelè divergentia. Stylus gracillimus, staminibus parùm longior, apice levitè incrassatus. STIGMA in fauce corollæ, magnum, infundibuliforme, 3-lobum; lobi subulati, valdè acuminati, laterales breviores, in formam crucis divergentes (unde nomen genericum). FRUCTUS haud visus.

I possess another species, which was found at Tavoy by William Gomez in 1827. It may be distinguished in the following manner: *Staurogyne angustifolia*, foliis lineari-lanceolatis, sepalis bracteisque hispidulis.

Plate CLXXXVI. Fig. 1. 2. Flower. 3. Calyx, opened. 4. Corolla. 5. 6. Two detached stamens, enlarged.

CEROPEGIA PUBESCENS. Tab. 187.

VOLUBILIS, foliis ovatis, acuminatissimis, pilosulis; corollæ tubo longo, cylindrico, subrecto, limbo ovato, 5-carinato, basi hiant, caudâ cylindricâ terminato.

Crescit in monte Chandaghiry Napaliæ, florens mense Junii.

CAULIS herbaceus, gracillimus, tortuosus, longissimè volubilis, glaberrimus, ramosus; rami filiformes. FOLIA opposita, patentissima, remotiuscula, ovata, attenuato-acuminata, integerrima, repandula, basi rotundata, 3—6-pollicaria, membranacea, minutim pellucido-punctulata, ciliata, pilis sparsis subadpressis utrinque obsita, præcipuè subtus ubi pallida, nervis elevatis, obliquis, suboppositis, ad basin inæqualem subquinqvenervia; superiora ovato-oblonga. PETIOLUS 2-pollicaris, teres, suprâ parùm sulcatus ciliatusque, basi utrinque glandulâ sessili, globosâ, sphacelatâ munitus, cum opposito petiolo caulem ramumve lineâ elevatâ amplexens. FLORES magni, tubulosi, purpurei, limbo flavi, inodori, dispositi in fasciculum axillarem vel extra-axillarem, suffultum pedunculo communi tereti, puberulo, petiolum ferè æquante; pedicelli crassiusculi, inæquales, unguiculares, circitè 6 vel 8 in singulo fasciculo, bracteolis ad basin subulatis, parvulis. CALYX parvus, 5-fidus, lævis; lacinie lanceolatæ. COROLLA sesquipollicaris, extus glabra; tubus cylindricus, levitè incurvus, basi vix dilatatus, intus villosulus; limbus ovatus, pentagonus, processu longo subcylindrico terminatus, dimidio tubo vix longior, æstivatione clausus, 5-carinatus, demùm mediò inter bases laciniarum patens; lacinie valvæformes, ovatæ, attenuatæ in acumen longum, teres, intus subangulare, angulo per paginam internam lacinie lineolâ elevatâ decurrente. COLUMNA staminum brevis in fundo tubi corollæ. CORONA subduplex: exterior minuta, 5-dentata, squamæformis, interiore multùm brevior, basibus ejus opposita; interior purpurea, 5-loba, lobi subulati, basi intus pro recipienda basi filamentum sulcati, apice levitè recurvati. FILAMENTA brevissima. ANTHERÆ subglobulares, nudæ. MASSÆ POLLINIS erectæ, fuscæ, ope fili subtilis insertæ medio corpusculi oblongi, atri. OVARIA 2, subcylindrica, lævia. STIGMA carnosum, depresso-subquingulare, suprâ membranulis 5 angustissimis subcarinatum.

Plate CLXXXVII. Fig. 1. Flower. 2. Corolla.

HYMENODICTYON FLACCIDUM. Tab. 188.

Hymenodictyon flaccidum, Wall. in Roxb. Flor. Ind. vol. ii. p. 152.

Habitat ad latus septentrionale montis Sheopur versus basin; etiam in convalli Napaliæ minore, Noakote dicta; florens, fructuque onustum præcedentis anni mense Junii.

Plate CLXXXVIII. Fig. 1. Flower. 2. Calyx; and 3. Corolla, opened. 4. 5. Ovary, dissected. 6. Raceme of ripe capsules. 7. A detached fascicle of capsules.

PYRUS FOLIOLOSA. Tab. 189.

ARBUSCULA, ramis subvolubilibus; foliis pinnatis, 8-jugis, foliolis oblongo-lanceolatis, versus apicem cuspidato-serrulatis, subtus petiolisque villosis; pomis obovato-rotundatis.

Crescit versus apicem montis Sheopur, et ad Gossain Than. Floret mense Maii; fructus profert Augusto.

ARBUSCULA. RAMI elongati, subvolubiles, cortice induti cinereo, scabro, ad extremitates vestiti lanugine densâ, niveâ, demùm deciduâ. GEMMÆ ovatæ, obtusæ, nudæ. FOLIA approximata, alterna, patentia, 6-pollicaria, impari-pinnata, 7—8-juga; foliola exactè opposita, patentissima, subsessilia, pollicaria et ultrâ, oblongo-lanceolata, cuspidato-acuta, extrorsum acutè serrulata, dimidiâ inferiore parte integerrima, basi obtusa parùmque inæqualia, suprâ lævia, nitida, subtus subferrugineo-tomentosa, ætate glabra; media reliquis paullò majora. PETIOLUS pollicaris vel sesquipollicaris, sulcatus, basi levitè incrassatus, tomentosus; rachis recta, submarginato-sulcata.

ad insertionem foliolorum subarticulata; *petioli partiales* perquam breves. *STIPULÆ* lanceolatae, acuminatae, nunc lobulosae, 3 lineas circiter longae, petiolo utrinque adnatæ, deciduæ. *PANICULA* terminalis, ramosa, rotundata, foliis supremis brevior. *PEDUNCULI* teretes, villosi, ad divisuras muniti *bracteis* parvulis, linearibus, caducis. *FLORES* albi, parvi, suaveolentes, brevè pedicellati. *CALYCIS laciniae* lanceolatae, breves. *PETALA* orbiculata, brevissimè unguiculata. *OVARIUM* obovatum, villosum, 2—3-loculare; *locula* 2-sperma. *STYLI* 2, 3, vel 4. *POMUM* parvum, glabrum, obovato-rotundatum, rubrum.

Plate CLXXXIX. Fig. 1. 2. Flower. 3. The same, dissected. 4. Ovary, opened.

HEDERA POLYACANTHA. Tab. 190.

ARBOR aculeis armata frequentissimis, compressis, sursùm incurvis; foliis palmatim 5—7-lobis, subtus pedunculisque puberulis, lobis ovatis acuminatis, serrulatis; umbellis racemoso-paniculatis, villosis.

Crescit in monte Sheopur alibique in Napalia, florens Februario.

ARBOR satis magna. RAMULI patentes, crassi, cylindrici, cinerei, aculeis armati valdè numerosis, brevibus, compressis, sursùm incurvis, fusciscentibus; supernè pedunculique pubescentes. FOLIA versus summitates approximata, sparsa, patentia, longè petiolata, subrotundo-cordata, palmata, 5—7-loba, 6—10-pollicaria, plana, coriacea, suprâ nitida, lævia, subtus vix puberula, costis 5 vel 7 valdè crassis, nervoso-venosa; lobi ovati, acuminati, cuspidato-serrulati, inferiores basi ad latera sinus gibbosi. PETIOLUS gracilis, cylindricus, folium æquans vel eodem duplò longior, basi valdè dilatatus. INFLORESCENTIA terminalis, magna, ovata, constans racemis umbellularum pluribus, oblongis, approximatis, alternis. PEDUNCULI cylindrici, pubescentes; communis aliquandò aculeo parvulo, vago munitus. FLORES parvi, flavicantes, pedicellique extus densè villosi, dispositi in umbellas globosas, pedunculatas. CALYCIS dentes 5, breves, valdè villosi. PETALA patentissima, lanceolata, acuta, intus levitè carinata. STAMINA 5, longitudine petalorum; antheræ majusculæ. OVARIUM turbinatum, pubescens; stylus brevis, subangulatus; stigma retusum.

Plate CXC. Fig. 1. 2. Flower. 3. The same, opened. 4. Ovary, opened. 5. Part of a branch. 6. Full-grown leaf.

DEUTZIA STAMINEA. Tab. 191.

Deutzia staminea Brown MS.

Philadelphus vel Leptospermum stamineum Wall. in Herb. Procur. Ampl. Merc. Angl. Indiæ Orient., anno 1824.

Habitat in montibus altissimis prope vallem Napaliæ magnam; etiam in monte prope vallem Deyra dictam. In Kamaon legit Robertus Blinkworth. Floret Aprili, Maio.

FRUTEX ramosus, 3—4-pedalis. RAMI oppositi, patentes, graciles, elongati, cylindrici, cortice induti pallido, dum juniores foliaque subtus vestiti tomento copioso, minutim stellato, adpresso, albo; vetustiores glabri, a foliis ferè denudati. FOLIA opposita, patentia, in ramis recentibus numerosa et approximata, lanceolata, attenuato-acuminata, cuspidato-serrulata, ad basin acutiusculam apicemque integerrima, 2—3-pollicaria, pallida, scabrida, utrinque obsitæ, præcipuè ad paginam inferiorem ubi densissimè, tomento cano, e squamulis adpressis, minutissimis, peltatis, depresso-umbilicatis conflato, pilisque stellatis; subtus costâ nervisque obliquis elevatis. PETIOLUS vix bilinearis, suprâ levitè sulcatus, basi lineolâ elevatâ trans ramum continuatus. STIPULÆ nullæ. FLORES magni, albi, odorati, extus stellato-tomentosi, ternati, pedunculati, dispositi in corymbos parvos, omnium ramorum ramulorumque terminales. PEDUNCULI teretes, carnosissimi, tomentosi, indivisi, sæpius 2 vel 3, pollicares; pedicelli unguiculares, graciles, infra medium bracteolâ unâ alterâve minutâ, lineari. CALYX parvus, 5-partitus; laciniae lanceolatae, acutæ, subdistantes. COROLLA 5-petala, calyce multò major, æstivatione valvata; petala semiunguicularia, oblonga, obtusa, subpatentia, glanduloso-punctulata, extus pilosula, intus glabra, basi latiusculâ vertici ovarii inserta, lacinii calycis alternantia. STAMINA 10, erecta, quorum 5 petalis alternantia et longitudine eadem subæquantia, 5 breviora, iisdem opposita; filamenta filiformia, utrinque aucta membranâ lineari, sursùm dilatâtâ, terminatâ dente lanceolato, obtuso, parùm divergente, apice subulata, nuda; primo aspectu filamentum apice 3-dentatum, esse apparet dente medio subelongato, subulato, antherifero, lateralibus planis, obtusis, nudis. ANTHERA ovata, erecta, bilocularis, utrinque dehiscens. OVARIUM inferum, obovato-turbinatum, cano-tomentosum, magnitudine grani piperis nigri, vertice planiusculum, 5-loculare; ovula plurima, placentæ angulo interiori loculi adfixæ, carnosæ, bipartibili inserta. STYLI 4 vel 5, staminum longitudine, tereti-subclavati, basi paralleli, apice paullò recurvati. STIGMATA lævia, carnosâ, obtusa.

Plate CXCI. Fig. 1. Fascicle of flowers. 2. A detached flower. 3. Stamens. 4. Pistil. 5. 6. Ovary, opened. 7. A detached leaf, showing the stellate tomentum on the under surface.

POTHOS DECURSIVUS*. Tab. 192.

Pothos decursiva Roxb. Flor. Ind. vol. i. p. 456.

Habitat super arboribus in Sillet, M. R. Smith; secus ripam fluminis Attran in Martabania, florens Martio. In Horto Calcuttensi floret Octobre.

Plate CXCII. Fig. 1. A detached pistil. 2. Stamen. 3. Ovary, opened. 4. Outline of a full-sized leaf. 5. A detached lobe of the same.

IMPATIENS PUBERULA. Tab. 193.

Impatiens ? puberula Decand. Prodr. vol. i. p. 687.

Impatiens mollis Wall. in Roxb. Flor. Ind. vol. ii. p. 461.

Habitat in sylvis densis Sheopur Napaliæ, florens sub pluviis.

Plate CXCIII. Fig. 1. 2. Flower.

IMPATIENS INSIGNIS. Tab. 194.

Impatiens insignis Decand. loc. cit. p. 688.

Crescit in montibus Napaliæ, florens et fructifera sub pluviis.

PLANTA annua, carnosâ, lævis, erecta, 2-pedalis. CAULIS cylindricus, sulcatus, valdè carnosus, pallidus, infernè digitum ferè crassus, ad distantiam pollicis nodoso-intumescens, basi *radiculas* exserens longas, fibrosas; simplex vel *ramum* emittens unum alterumve brevem, simplicem, gracilem. FOLIA approximata, alterna, lanceolata, attenuato-acuminata, serrata, serraturis gibboso-obtusis cum cuspidula decumbente, basi attenuato-acuta, 3—4-pollicaria, utrinque glabra, punctisque minutissimis, subhyalinis obsita, suprâ atroviridia, rugosula, subtus nervis valdè obliquis, parallelis costâque elevatis. PETIOLUS brevissimus, vix ultra lineas duas emetiens, basi utrinque *glandula* stipulæformi, magnâ, carnosâ, rotundatâ. RACEMI versus apicem caulis axillares, solitarii, longè pedunculati, 6-pollicares, *paniculam* formantes magnâ, terminalem. PEDUNCULUS communis teres, gracilis, purpurascens, 3-pollicaris, abiens in *rachin* teretem, coloratam; *partiales* filiformes, ferè pollicares, suffulti *bracted* ovatâ, acutâ, concavâ, deciduâ; fructiferi elongati, decurvati. FLORES magni, nutantes, inodori, coloris sanguinei. CALYCIS *foliola* ovata, cuspidata, purpurea. PETALUM *supremum* ovatum, patulum; *lateralia* biloba, subunguiculata; *inferius* amplum, fauce orbiculato-truncatum, hinc acutum, desinens in *calcar* gracile, teres, leviter arcuatum, sesquipollicare, pedunculo ferè duplè longius. CAPSULA cylindrico-clavata, lævis, pendula, longè pedunculata.

Plate CXCIV. Fig. 1. Flower. 2. The same, dissected. 3. Capsule.

DENDROBIUM MOSCHATUM, *Varietas*. Tab. 195.

Dendrobium moschatum Wall. apud Lindl. Orchid. p. 82.

Epidendrum moschatum Buchanan apud Symes, Embass. to Ava, p. 478, cum iconè.

Dendrobium Calceolaria Hook. Exot. Botany, vol. iii. tab. 184.

Habitat super arboribus montium Sillet confinium, undè in Hortum Calcuttensem misit M. R. Smith. Floret mense Aprilis, Maii.

PLANTA magna, speciosissima, super arborum truncis radicans. CAULES cylindrici, læves, sulcati, vaginati, *radiculas* plures, cylindricas, pallidas emittentes. FOLIA bifariè alterna, valdè approximata, coriacea, oblonga, acuta, lævissima, lucida, coriacea, 5-pollicaria, sessilia super *vaginis* arcuè cauli adpressis, truncatis, vix pollicaribus. FLORES magni, patentissimi, diametrum ferè 3-pollicarem emetientes,

* The name *Pothos caudata*, inscribed on the plate, should be altered to that here given.

salvo labello glaberrimi, longè pedunculati, e flavo dilutè carnei, circiter octo distanter dispositi in *racemum* maximum, pendulum, lato-ovatum, pedunculatum, foliis oppositum, in caule aphyllò lateralem. *PEDUNCULUS communis* 2-pollicaris, teres, levitè sulcatus, glaucescens, usque ad medium indutus *squamis* laxiusculè vaginantibus, imbricatis, truncatis; *rachis* gracilis, flexuosa, 6-pollicaris; *pedunculi* *subpartiales* divaricato-patentissimi, cylindrici, suffulti *bracted* membranaceâ, lanceolatâ, acutâ, concavâ, patentissimâ, deciduâ, apice *subpartiales* clavati. *SEPALA* oblonga, rotundato-acutiuscula, ferè sesquipollicaria, recurvato-patentissima; *lateralia* basi obliquè connata in *calcar* brevissimum et obsoletum, conicum, obtusum. *PETALA* lato-ovata, plana, sepalis paullò longiora, pollicem ferè lata, obtusissima, basi contracta in unguem latum, brevissimum. *LABELLUM* petalis tertio minus, obovato-saccatum vel calcariforme, extus versus marginem incurvatum faucemque magnam villosum, intus glabrum, flavum, parietibus purpureo-maculatis, in unguem brevem, canaliculatum deorsum attenuatum. *COLUMNA* crassa, brevis, conica, apice utrinque terminata dente plano, lato, parallelo, obtuso; ad dorsum gibbosa, antice plana, cavitate stigmaticâ amplâ excavata, basi leviter producta. *ANTHERA* magna, conica, carnosâ, denticulo longo filiformi adfixa. *POLLINIA* 4, per paria parallela. *OVARIUM* breve, clavatum, parùm sulcatum, læve.

This truly beautiful plant is so perfectly like Dr. Buchanan's *Epidendrum moschatum*, figured and described by him in Symes's Embassy to Ava, that I cannot distinguish it, except as a variety, differing only in the colour of its flowers. It was sent to the Calcutta Garden by the late Mr. Smith from the mountainous tracts bordering on Silet. The flowers are of a yellowish pink colour, and rather larger than those of *Dendrobium moschatum*, which I have seen in great perfection in the garden of my highly esteemed friend Dr. Carey, at Serampur, sixteen years ago, and in the Botanic Garden at Calcutta, where it was introduced by that gentleman.

I perfectly agree with my friend Prof. Lindley, (*Genera and Species of Orchid. Plants*, p. 83, under No. 37,) in considering Dr. Hooker's *Dendrobium Calceolaria*, described and figured in the Exotic Botany of the latter eminent botanist, as specifically the same as the Pegu plant; it is in fact the same variety as mine, although its flowers partake in a greater degree of the tessellated structure of the original species. I was not so fortunate as to meet with Dr. Hamilton's plant during my tour through the Burmese countries.

Plate CXCV. Fig. 1. Flower, opened. 2. Column, with the anther.

DENDROBIUM HETEROCARPUM. Tab. 196.

Dendrobium heterocarpum Wall. apud Lindl. loc. cit. p. 78.

Habitat in sylvis montanis Napaliæ super arboribus, florens Februario, fructiferum Martio.

RADICES fibræ plurimæ, cylindricæ, cineræ, carnosæ. *CAULES* plures, cespitosi, e basi flavicante, tereti clavati, penduli, leviter flexuosi, apice digitum minimum crassi, glaberrimi, obsiti *vaginis* tenuissimè membranaceis, arcuè adpressis, parallelè multilineatis, ore obliquis, *floriferi* nudi, inter vaginas breves, emarcidas intumescentes. *FOLIA* bifariè alterna, approximata, lanceolata, acuta, sessilia, 5-pollicaria, membranacea, striata, lucida, lævia. *FLORES* magni, patentes, flavi, fragrantés, ex ostio vaginarum aphyllarum geminati, nunc pauci subracemosi. *PEDUNCULUS communis* brevis, cylindricus, bracteis aliquot brevibus, vaginantibus involutus; *partiales* pollicares, teretes. *SEPALA* patentia, lanceolata, acuta, glabra, æqualia; *lateralia* basi in *calcar* breve, conicum, obtusum infra basin columnæ connata. *PETALA* sepalis æqualia. *LABELLUM* magnum; flavum, ovatum, subinfundibuliformi-convolutum, basi glabrum, attenuatum in ungum sulcatum; *limbus* trilobus, crenulatus, suprà cano-villosus, purpurascens; *lobi laterales* obtusi, *intermedius* maximus, ovatus, acuminatus, patens, apice subrecurvatus. *COLUMNÆ* brevis, conica, terminata dentibus duobus lateralibus, lanceolatis, acutis, basi valdè producta. *ANTHERA* conica. *POLLINIA* 4, gracilia, duriuscula. *OVARIUM* breve, sulcatum. *CAPSULA* pendula, sesquipollicaris, pedunculata, clavata, 3-angularis, profundè 3-sulcata, angulis bilobis, utrinque obtusa, terminata collo cylindrico, brevi, columnæ permanentis, incrassatæ superstite.

Plate CXCVI. Fig. 1. Flower, dissected. 2. Column and labellum. 3. Anthers and pollen-masses.

ERIA ALBA. Tab. 197.

Eria alba Lindl. loc. cit. p. 67.

Crescit in monte Sheopur, super arborum truncis, florens Maio.

PLANTA laevis, gregaria, erecta, 6-pollicaris. FIBRÆ RADICALES densissimæ, capillaceæ, ramosæ, breves. PSEUDOBULBI plures, seriati, valdè approximati, ovati, complanati, sesquipollicares, fusi, nitidi, striis pallidis, ferrugineis, numerosis, parallelis, interque has sulcis totidem profundis ornati, apice subacuto notati vestigiis aliquot dimidiato-annularibus ab insertione foliorum manentibus, basique rudi-

mentis vaginarum præteriti anni fibrosis. FOLIA pauca, 3 vel 4, bifaria, patentia, oblongo-lanceolata, attenuato-acuta, 3—5-pollicaria, suprâ atroviridia, lucida, subtus pallida, levissimè nervosa, basi plicato-imbricantia, *caulemque* simulantia cylindricum, bipollicarem, e basi pseudobulbi surgentem, erectum, squamis alternantibus, adpressis, acutis vaginatum. SCAPÆ terminales inter folia intima, sæpissimè 2, rarò unicus, teretes, erecti, breves, puberuli. FLORES albi, mediocris magnitudinis, gratè odori, plures dispositi in *racemum* terminalem, erectum, oblongum, 2—3-pollicarem, vix ultra folia elevatum. RACHIS leviter hinc indè curvata, villosa, teres, carnosâ. PEDUNCULI teretes, semiunguiculares, cum *bractea* æquante, lanceolata villosi. SEPALA lanceolata, acuta, patentia, ferè unguicularia; *lateralia* basi paullò dilatata, obliquâ connata in *calcar* brevissimum, obtusum, conicum. PETALA lineari-lanceolata, sepalis parùm angustiora. LABELLUM adscendens, infundibuliformi-convolutum, longitudine petalorum, flavescens, intus tricarinatum; *limbus* 3-lobus; *lobus intermedius* ovatus, obtusus, recurvatus, integerrimus, suprâ convexus, mediò lineâ longitudinali, saturatè flavâ notatus; *laterales* triplò minores, erecti, paralleli, ovati, obtusi, rosei. COLUMNA brevis, apice truncato-concava. ANTHERA semiglobosa. POLLINIA 8, cuneata, compressa, alba. OVARIVM cuneatum, 3-angulare, pubescens.

Plate CXC VII. Fig. 1. Flower. 2. The same, opened. 3. Anther. 4. Pollen-masses. 5. Labellum, expanded.

PHAIUS ALBUS. Tab. 198.

Phaius albus, caulescens, foliis oblongo-lanceolatis, acutis, subtus glaucis; sepalis petalisque oblongo-lanceolatis, acutis, subæqualibus, labello oblongo, cucullato, denticulato, apice rotundato, disco 5-cristato, calcare rectiusculo, emarginato.—*Lindl. MS.*

Crescit super arboribus montis Chandaghiry Napaliæ. In montibus Sillet propinquis legit Franciscus de Silva? Floret mensibus Junii et Julii.

RADIX constans fibris cæspitosis, fuscis, brevibus. CAULES aliquot pedales bipedalesque, quin longiores, penduli, subrigidi, cylindrici, basi digitum minimum ferè crassi, plùs minùsve involuti *vaginis* cylindricis, laxè truncatis, nunc ore obliquo subfoliaceis, apicem versus attenuati et foliiferi, demùm omninò aphylli, uti tota planta læves, glaucescentes. FOLIA alterna, bifaria, obliquè subpatentia, valdè approximata, oblongo-lanceolata, attenuato-acuminata, 6—8-pollicaria, basi plicata et per articulationem in vaginas desinentia, suprâ lucida, subtus glauca, costâ gracili, nervisque pluribus, filiformibus, parallelis, elevatis. FLORES magni, speciosi, albi, odorati, pauci dispositi in *racemum* terminalem, bracteatum, foliis breviorum, pendulum, suffultum *pedunculo* cylindrico, vaginâ involuto, in rachin abeunte subflexuosam. BRACTEA infra singulum florem, cujus longitudinem ferè æquat, 2-pollicaris, lanceolata, acuminata, concava, membranacea, e viridi alba, seriùs dilabescens. PEDICELLI cylindrici, ferè pollicares. SEPALA lanceolata, acuta, æqualia. PETALA sepalis æqualia, iisdem paullò angustiora. LABELLUM rectum, infundibuliformi-convolutum, ferè bipollicare, basi desinens in *calcar* levissimè recurvum, subcylindricum, apice subretusum, semipollicare, pedicello dimidiò brevius; *laminæ* patentis, obsoletè 3-lobæ *lobi laterales* obtusi, *intermedius* maximus, ovatus, obtusus, crenulato-denticulatus, purpureo-venulosus, *discus* flavus, cristis 5 papillosis, parallelè usque ad fundum labelli decurrentibus. COLUMNA clavata.

Plate CXC VIII. Fig. 1. Flower, dissected. 2. Pollen masses, detached.

ENGELHARDTIA ROXBURGHIANA. Tab. 199.

FOLIOLIS oppositis, 4—5-jugis, adultis oblongis, acuminatis, glabris, junioribus tomentosis; fructibus hispidissimis, alis lineari-lanceolatis, acutiusculis, racemis folio longioribus.—*Lindl. MSS.*

Engelhardtia Roxburghiana, Lindl. MSS.

Juglans pterococca, Roxb. Hort. Beng. p. 68.

Nomen Hindustanicum, *Silapoma*; Bengalense, *Boles* (ex Roxb.).

Crescit in Sillet, F. De Silva; in Camrupæ borealis sylvis, Hamilt.; ipse observavi in Napalia et ad oram Tenás-serim. Floret et fructus profert mensibus Septembris—Aprilis.

ARBOR magna, cortice brunneo. RAMULI scabri, punctis notati elevatis, albis; *novelli* obsiti squamulis aurei coloris. FOLIA alterna, vel subopposita, abruptè pinnata, 6—12-pollicaria. FOLIOLA 3—5, usque ad 13, brevè petiolata, obliquè lanceolata, obtusè acuminata, integerrima, firma, lævia, pollices 3—6 longa, pollicem vel 2 lata. PETIOLUS teres, initio squamulosus. PANICULA axillaris terminalisque, foliis brevior, constans *amentis* masculis pluribus gracilibus, simplicibus, femineis paucis intermixtis, squamulosis. FLORES *masculi* suffulti squamis solitariis, obsoletis. CALYX 4-phyllus; *foliola* rotundata, concava, distantia. COROLLA nulla. FILAMENTA 12, basi sepalorum inserta. ANTHERÆ magnæ, bilobæ. FLORUM *femineorum* squamæ et calyx ut in masculis, sed majores. OVARIVM inferum, turbinatum,

lepidosum, uniloculare; *ovulum* solitarium fundo loculi insertum. STIGMA subsessile, 2-lobum; *lobi* patentes, sublaevi. Nux. rotundata, valdè pilosa, magnitudine pisi, unilocularis, basi pseudoquadrilocularis, coronata calyce permanente, suffulta squamâ amenti auctâ, tripartitâ; *alæ* longæ, lanceolatae, obtusæ, scariosæ: *intermedia* maxima, *laterales* interdum productæ in processum brevem, bilobum. SEMEN 4-lobum. INTEGUMENTUM simplex, tenue, fuscum. PERISPERMUM semini conforme, parcum, sebaceum. EMBRYO inversus. COTYLEDONES contortuplicatæ, bipartitæ; *lobi* bifidi. PLUMULA biloba. RADICULA supera.—*Roxb. MSS.*

I am indebted for the description of this and the following plant (*Ulmus lanceæfolia*), and for the drawings from which the engravings have been made, to the valuable collection made by the late Dr. Roxburgh, and deposited in the library of the Honourable East India Company. Dr. Roxburgh says that the bark possesses much tannin, and is reckoned by the natives of Silet the best they are acquainted with for the purpose of tanning.

reckoned by the natives of Silet the best they are acquainted with.

Plate CXCIX. Fig. 1. 2. Male flower. 3. Female flower. 4. Scales of ditto. 5. 6. Ovary, cut vertically and horizontally.

7. Fruit.

ULMUS LANCEÆFOLIA. Tab. 200.

FOLIIS obliquè lanceolatis, acuminatis, acutè serrulatis, coriaceis, glabris, lucidis, floribus hexandris, fasciculatis.
 Habitat in montosis provinciæ Chittagong, ubi floret Martio.—*Roxb.*

ARBOR magna. RAMI undique extensi, patentissimi; *ramuli* graciles, nutantes, glabri. FOLIA bifaria, brevè petiolata, inæqualiter lanceolata, obtusè æqualiter serrata, firma, lucida, 2—3-pollicaria. STIPULÆ ensiformes, caducæ. FLORES parvi, numerosi, longè pedicellati, dispositi in *fasciculos* solitarios, axillares foliorum inferiorum vel delapsorum præteriti anni. PEDICELLI villosi, graciles, uniflori, basi bracteolis ovatis, ciliatis, numerosis. CALYX campanulatus, glaber, 5-dentatus. STAMINA 6, calyce longiora, plana, glabra. ANTHERÆ ovatae, bilobæ. OVARIUM pedicellatum, oblongum, 1-loculare, 1-sporum; *ovulum* fornicis oculi adfixum. STYLI 2, breves, latiusculi, intus villosuli. STIGMATA simplicia. CAPSULA pedicellata, obliquè obcordata, tenuis, alâ scariosâ circumdata, pollicaris, 1-locularis. SEMEN ovale, compressum. INTEGUMENTUM fuscum, simplex, tenue. PERISPERMUM nullum. EMBRYO semini conformis, inversus.—*Roxb. MSS.*

Plate CC. Fig. 1. Flower. 2. The same, more advanced. 3. 4. Samara. 5. Embryo.

END OF VOL. II.



Corbucci del.

Printed by Engelmann, Graf, Lindt & Co

M. Gava del.

Aster bellidifolius





Sonerila angustifolia

Sonerila squarrosa

Wachner del.

Printed by Engelmann, Graf, Landt & Co.

H. v. d. Stee





Aristolochia saccata





Gorham del.

Printed by Englewood Press, London & Co.

M. Sars lith.

Acer lavigatum.





Acer sterculiaceum





Verzeichn. del.

Printed by Engelmann, Graf & Co. S. O.

M. Gaus, lithog.

Carpinus reminea





Vishnupersaud del.

Printed by Engelmann, Graf, Conrad & Co

M. Cassa del.

Castanea maritima



Eugenia formosa

Pinna & Engelm. et al. 1840. X.

M. J. H. H. H.





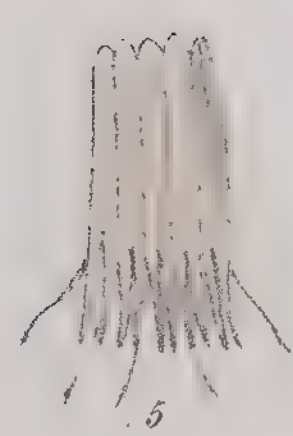
Betula acuminata





Uraria macrostachya





Ficus virens





Rehder, and det.

Painted by Engelmann Graf Oudot 1870

1870

Justicia curviflora



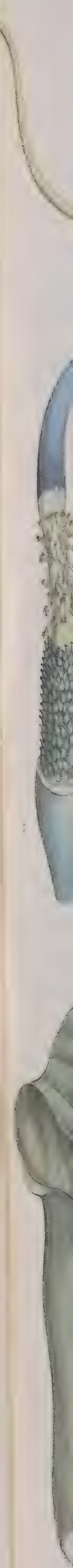


Gerachano 201

Det. A. v. Engelman, bot. Condit. a. 6

Det. A. v. Engelman

Justicia calcarata





Vishnupersaud del¹

Printed by Frankman Press, Israel U.S.

M vana liti

Arum tortuosum





Arum guttatum.





Salvia cana





Rosa macrophylla





Lysionotus ternifolia





Gottschaldt del.

Prodr. by Engelm. et al. Acad. Sci.

Turraea pinnata.





Corachand del.

Printed by Engelmann, Graf, Göttingen.

M. Gussone del.

Leicasteria formosa.





Uratia grandiflora

Corchond. del.

Printed by Engelmann, 1797, under N. 1

M. Goussier del.





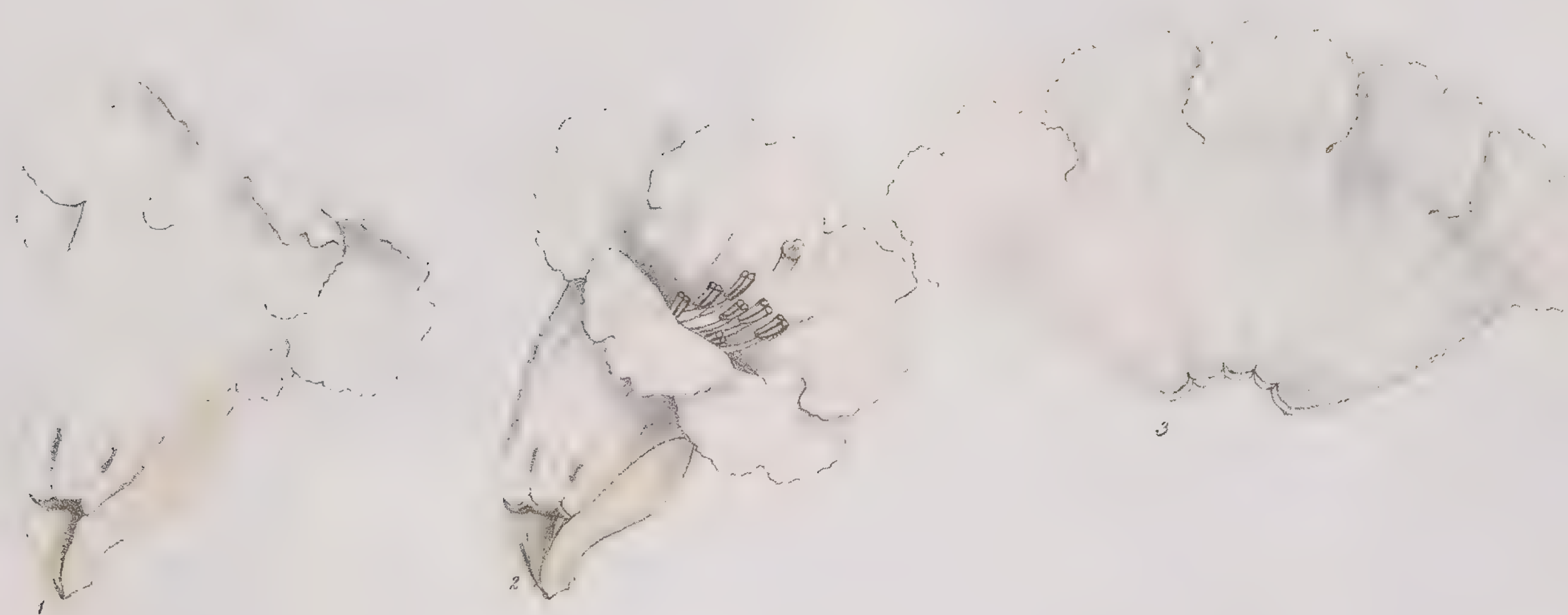
Comstock del.

Printed by Engelmann, 237 N. 3rd St.

W. B. Smith, 237

Uvaria macrophylla.





orachant dei

Printed by Eng. mann Graf Zunder 8. 10

See 'General Note' p. 1

Rhododendrum arboreum album





Printed by Engelmann, Graf, Conrad & Co.

Inga umbrosa





Painted by Engelmann and colored by K. W.

St. Louis 1874

Armesia glauca



*Paris polyphylla*



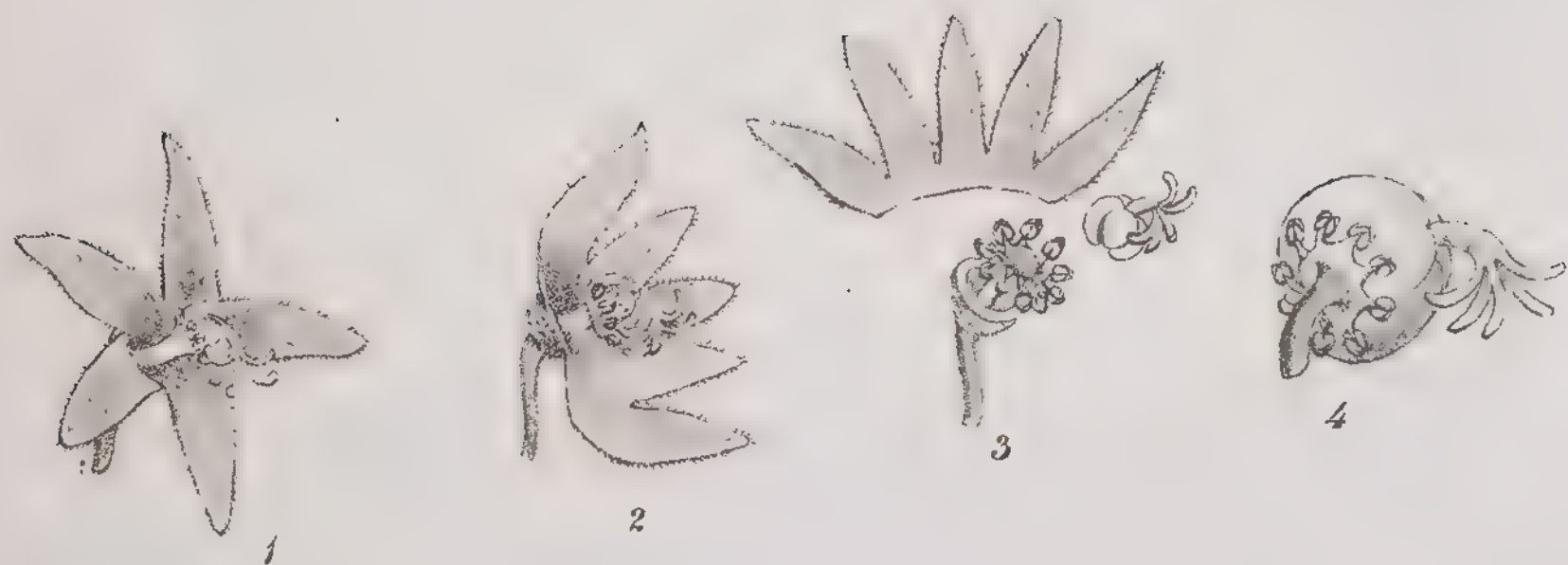


Illustration of the

Printed by Engelmann, Graf, Gerdner & Co

At the Lib.

Sterculia comosa





Delphinium altissimum

W. H. S. del.

Printed by J. G. & J. H. S. at the University Press, Cambridge.

M. G. H. 111





Gemachand. del.

Printed by Engelmann, Graf, Gerdes & Co.

M. Gauer. lith.

Thalictrum cysticarpum





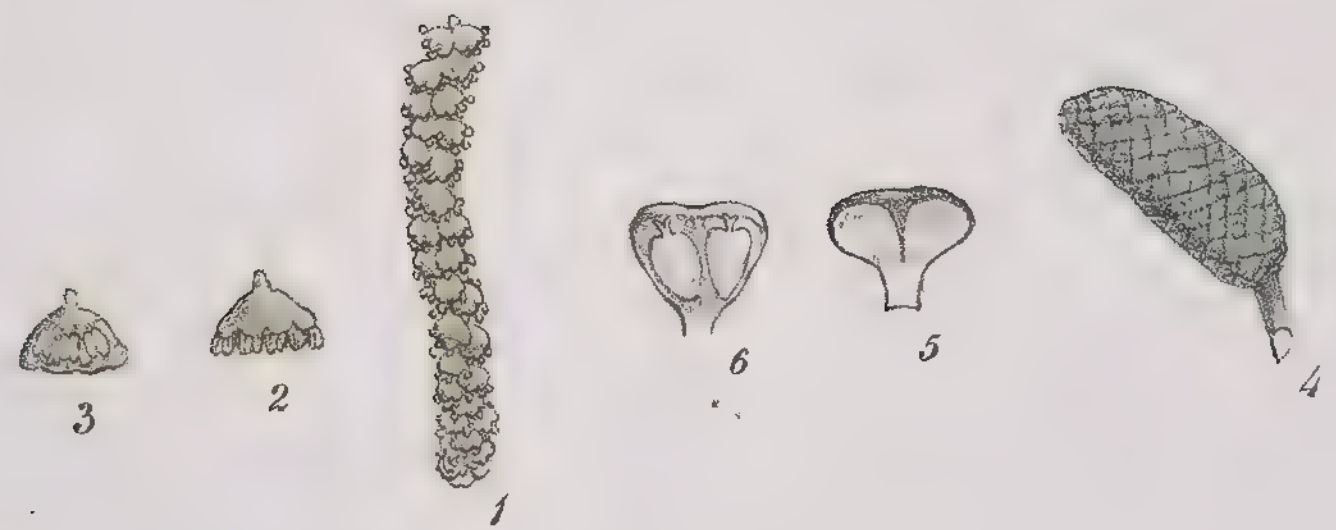
Acacia modesta

Ischnomeris det.

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Acacia modesta





W. H. H. & Co.

Printed by Engelmann, Graf, Linder & Co.

M. Bauer del.

Betula leptostachya





Coruchani del.

Printed by J. Neumann, Neudamm.

M. Bauer del.

Acer pectinatum





Rehmannia del.

Printed by Engelmann, Graf, and Co.

St. Louis, Mo.

Lanonia sarcophylla





G. Schumacher del.

Printed by Engelmann, Graf, Cordier & Co.

M. Gussone del.

Viburnum crubescens



Arum crubescens





Arum echinatum





Panax pseudoginseng

Painted by F. J. W. M. van der Meulen

H. J. van der Meulen





Gorochand del.

M. Gaudet del.

Saussurea gossypina.





Thompsonian del.

Painted by Thompsonian del. Conradt sculp.

M. Gussone lith.

Ceropegia lucida





Gerachand del.

Printed by Engelmann, Graf, Condell & Co

M. Gausa del.

Lidymocarpus oblonga





Goudot del.

Printed by Engelmann, Graf, Birder & Co.

M. Gaudet lith.

Didymocarpus aromatica.





Lischidia Rafflesiana



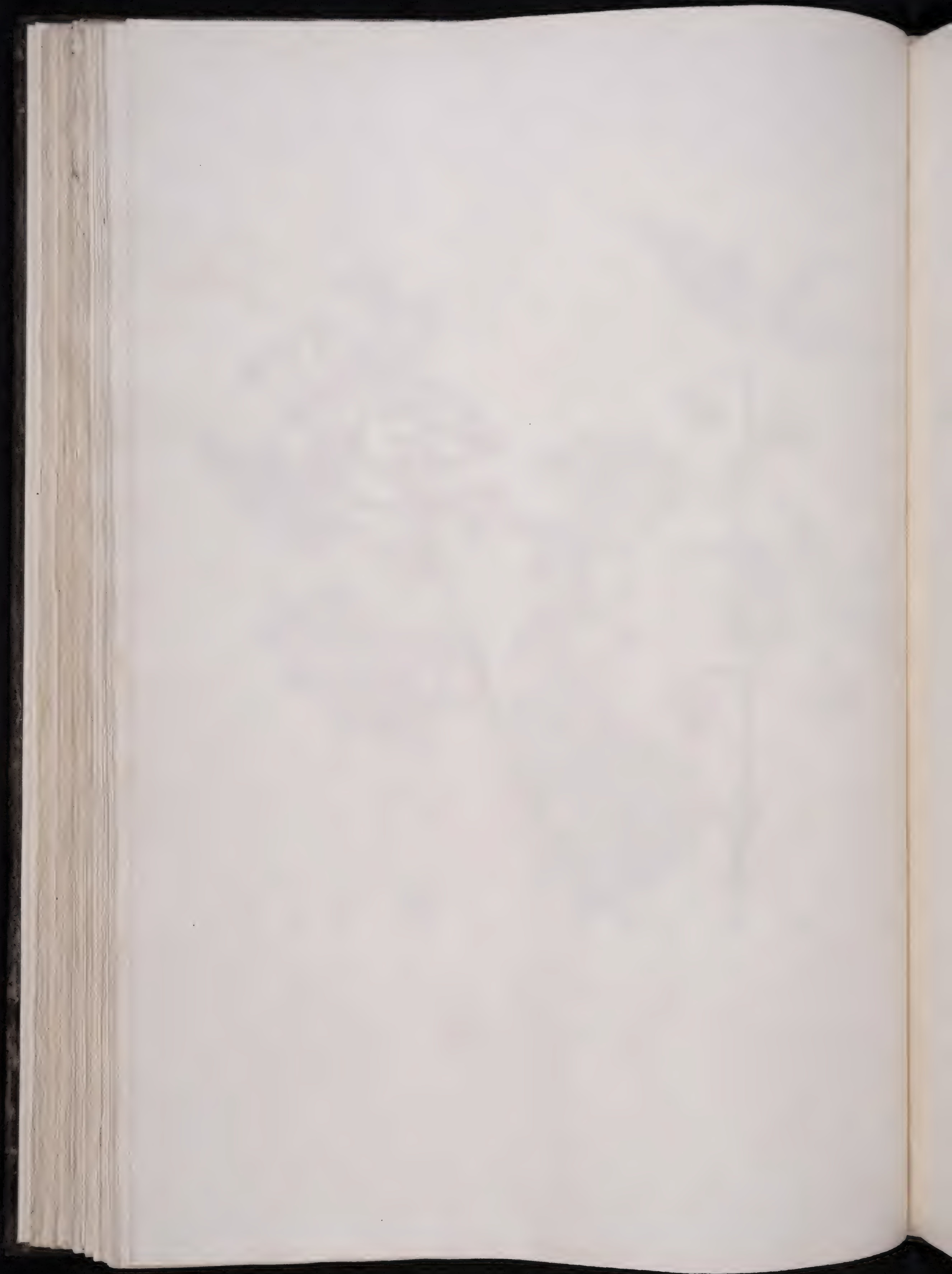


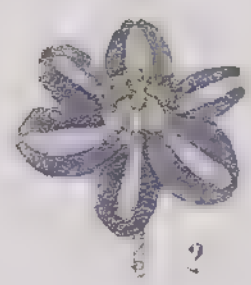
Engelmann del.

Printed by Engelmann, 1847.

M. Gaus lith.

Prunus Puddum



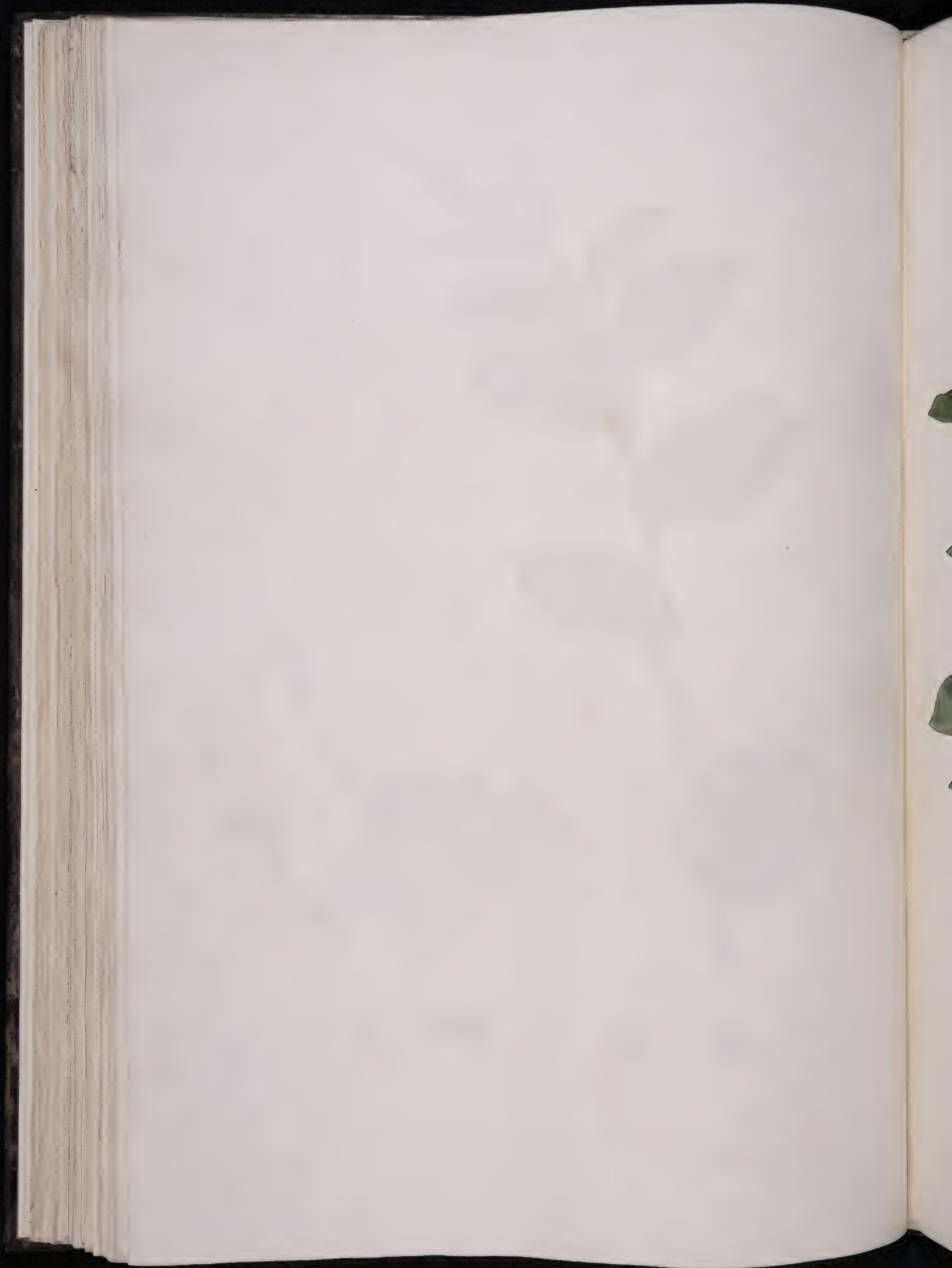


Forchard del.

Griseb. del. & sculp.

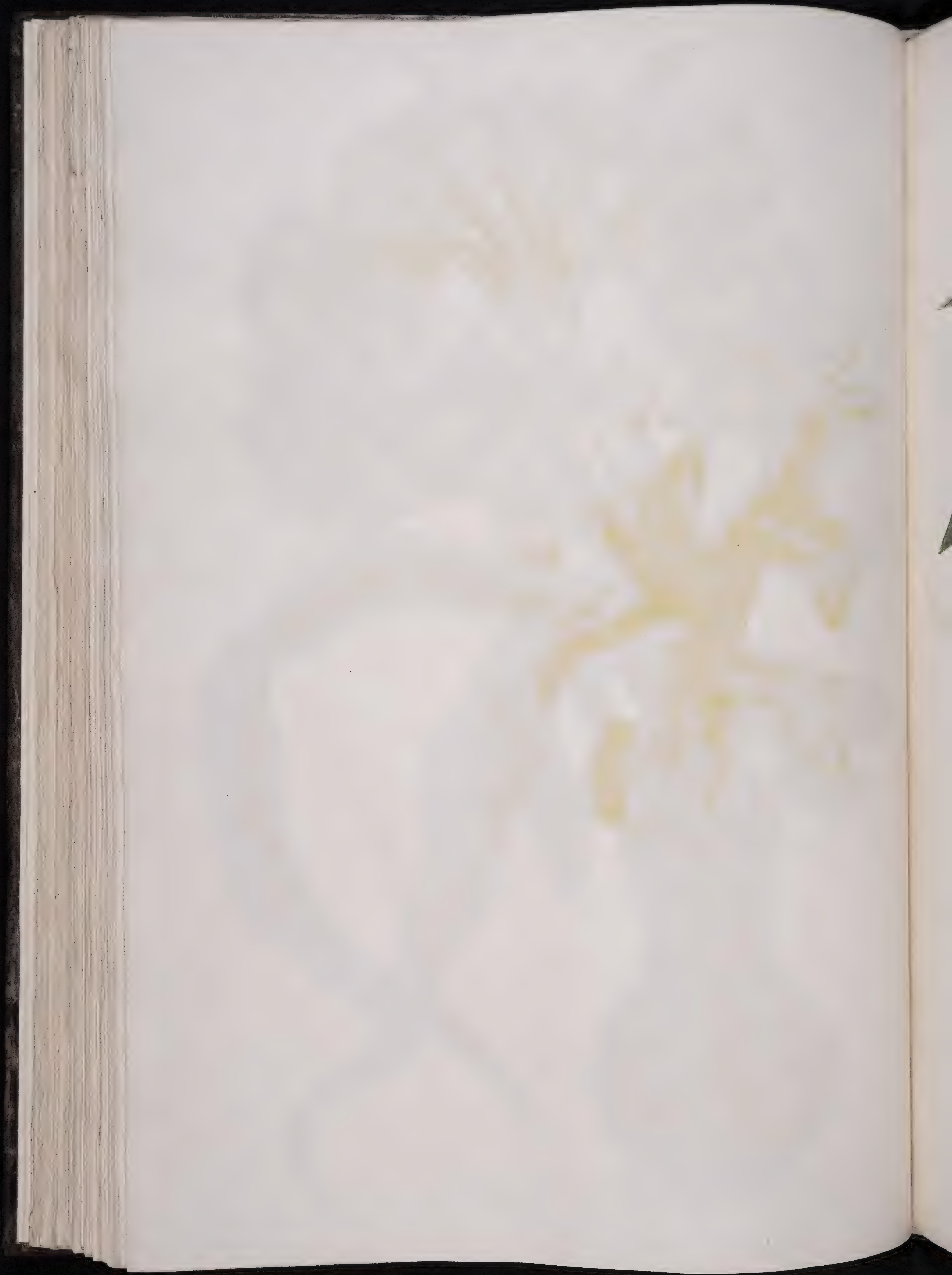
M. J. J. lith.

Imulacina purpurea





Crinum Herbertianum





Vehnerpaul del.

Printed by Engelmann, Graf, Lindel & Co.

M. Gaudet del.

Wrightia mollissima





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M. Gaudet lith

Michelia aurantiaca



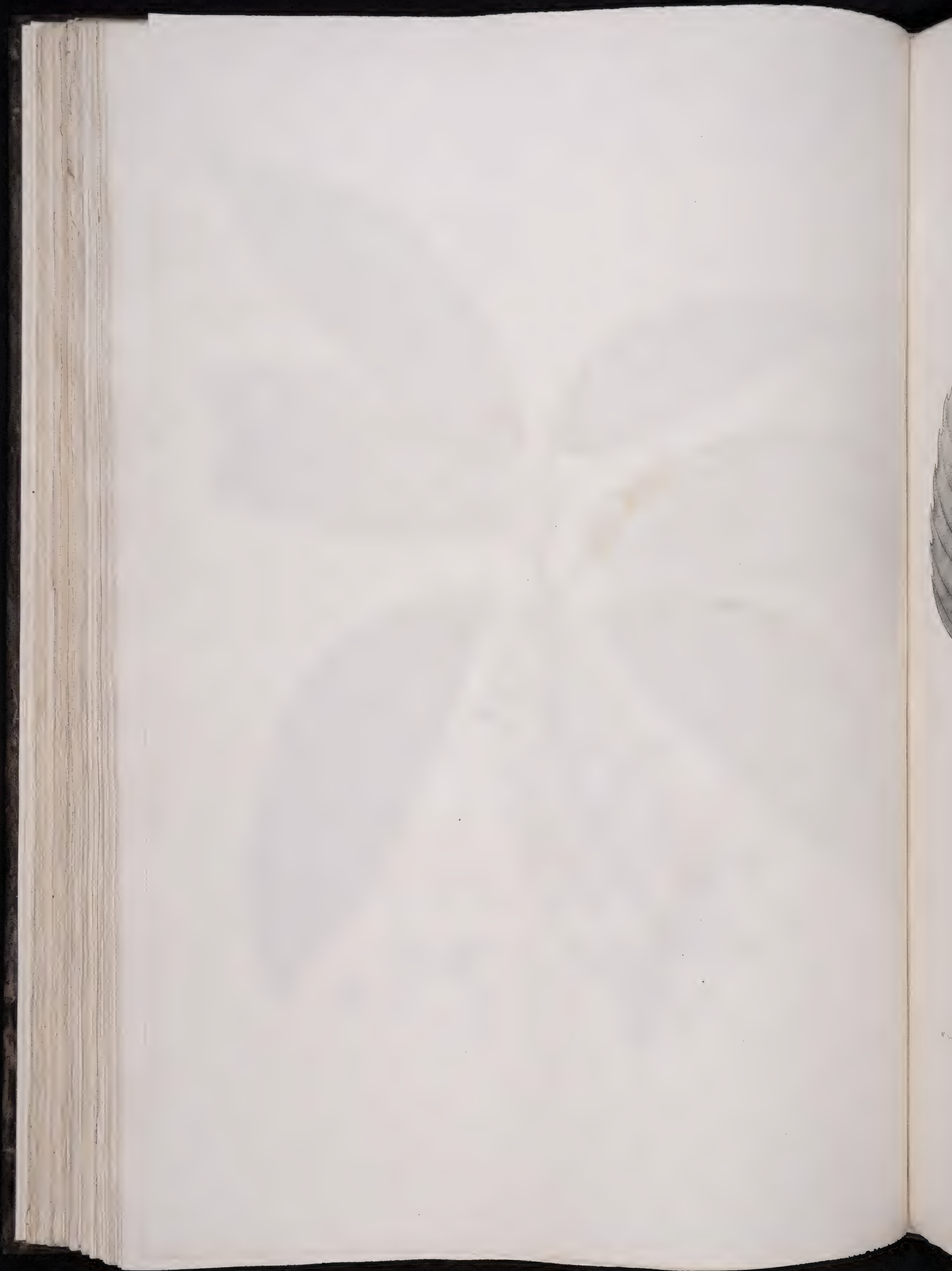


G. Engelmann del.

Printed by Engelmann Graf Gindet 1/2

G. Engelmann del.

Saurauya fasciculata





M. Goussier del.

V. Goussier lith.

Quercus lamellosa

Printed by Engelmann, Graf & Co. in Leipzig.





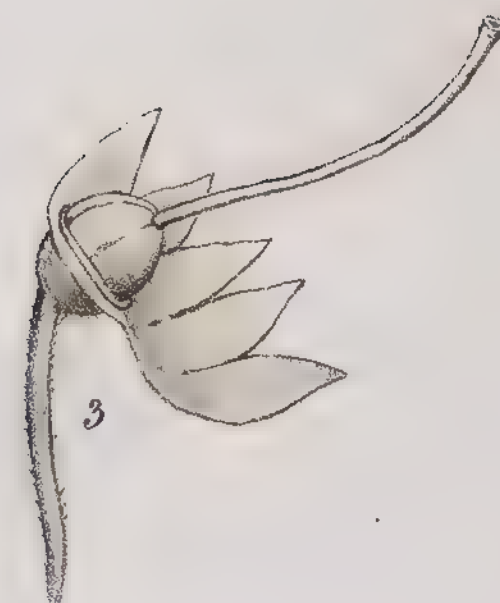
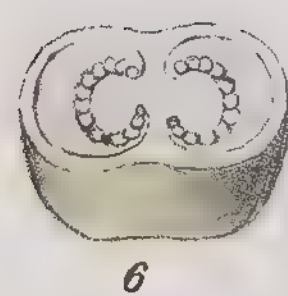
M. Guss. del.

M. Guss. lith.

Quercus velutina

Printed by Engelmann, Guss. & Co. n.d.



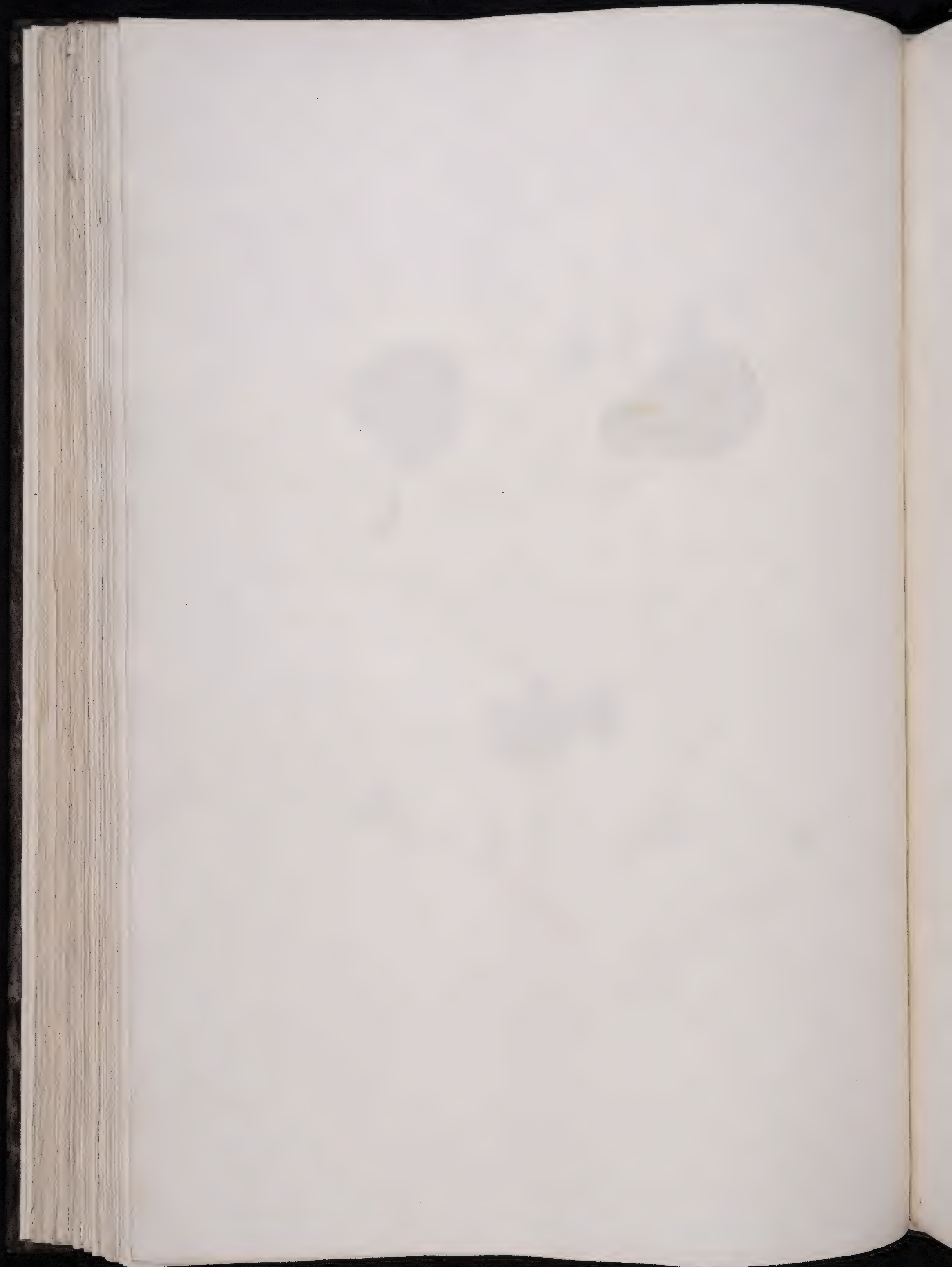


Corallorhiza del.

M. caesia L.

Platystemma violoides.

var. l. longicaule, fr. candido a l.





Corrachan del.

Printed by Engelmann, Graf, Gunders & Co.

M. Gausse del.

Lobelia rosea.





Kuhnertscand del.

Printed by Engelmann, Graf, Goudel & Co

M. Gaudet lith.

Linaria ramosissima





Pedicularis carnososa

Gouanchard del.

Printed by Engelmann, Graf Goudel & Co.

M. Gauva lith.





Pichnupersaud del.

Printed by Engström, Graf, Conzel & Co.

M. Gussone del.

Convolvulus barbatus





Vahnermann del.

Printed by Engelmann, Graf, Oeder, & Co.

M. Gaudet lith.

Pothos glauca



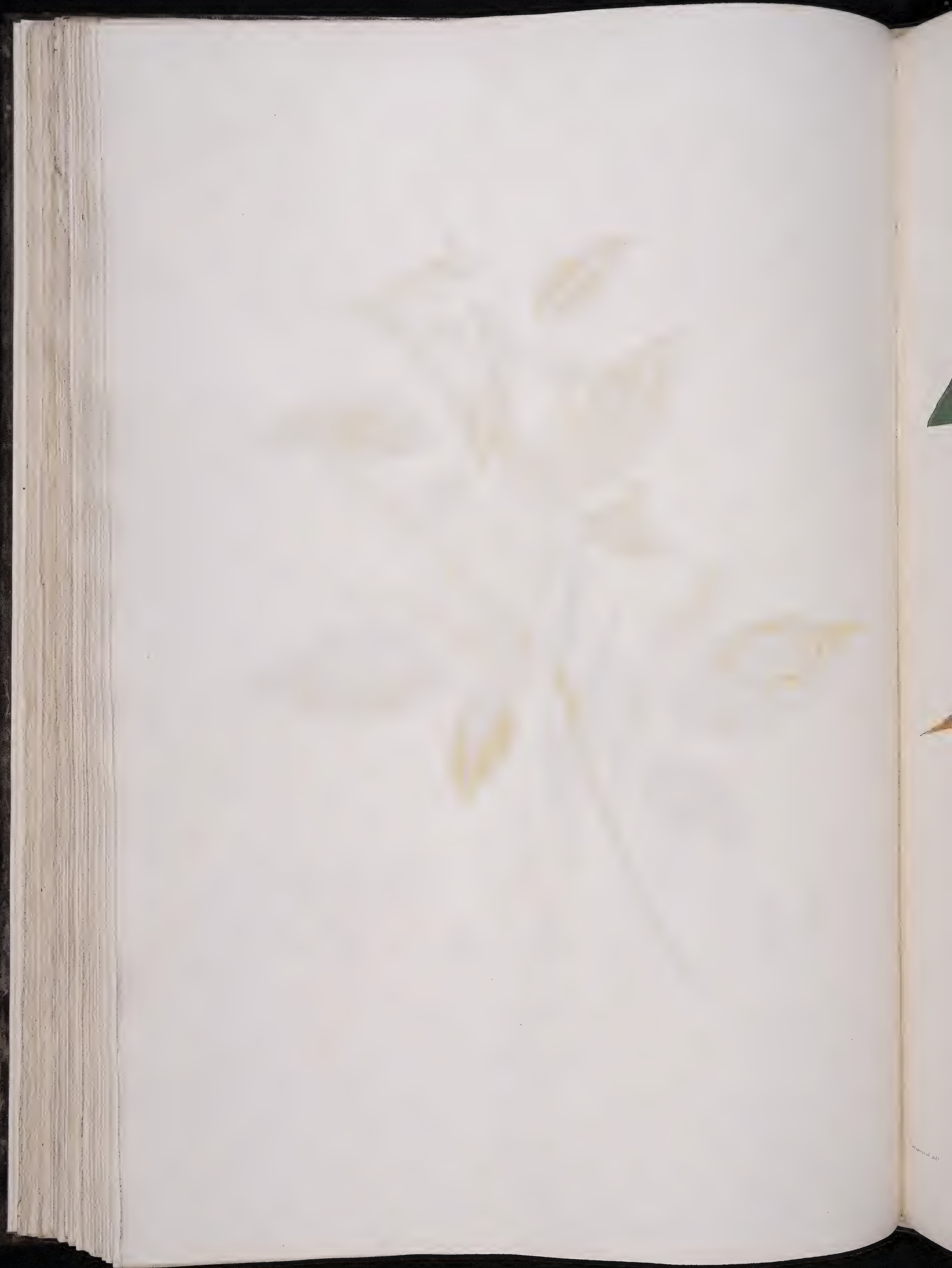


Cronquist del.

Printed by Engelmann, Prof. Griebel & Co.

M. Gaudet del.

Desmodium sequax





Phajus Wallisii.

W. & A. Wallis





Eria convallarioides.

Printed by Engelmann, Graf, Gendel & Co.

M. Gaudet del.

W. H. P. and del.





Eria excavata

Printed by Engelmann, Graf, Coindet & Co

M. Gaudet del.





Eugenia bifaria.

Printed by Engelmann, Graf, Coindor & Co.

M. Gausi del.

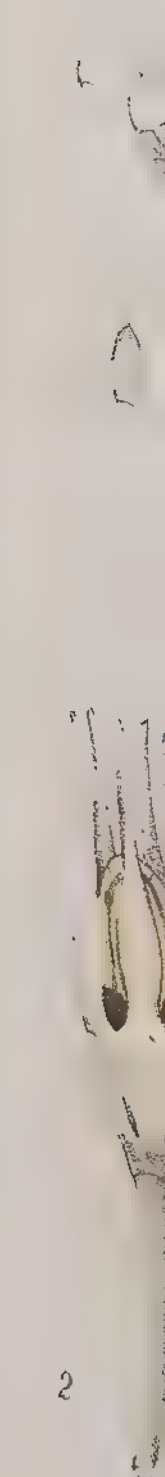




Fintlaysonia obovata.

Printed by Engelmann, Graf, Conrad & Co

M. G. G. G. G.





Raphistemma pulchellum.

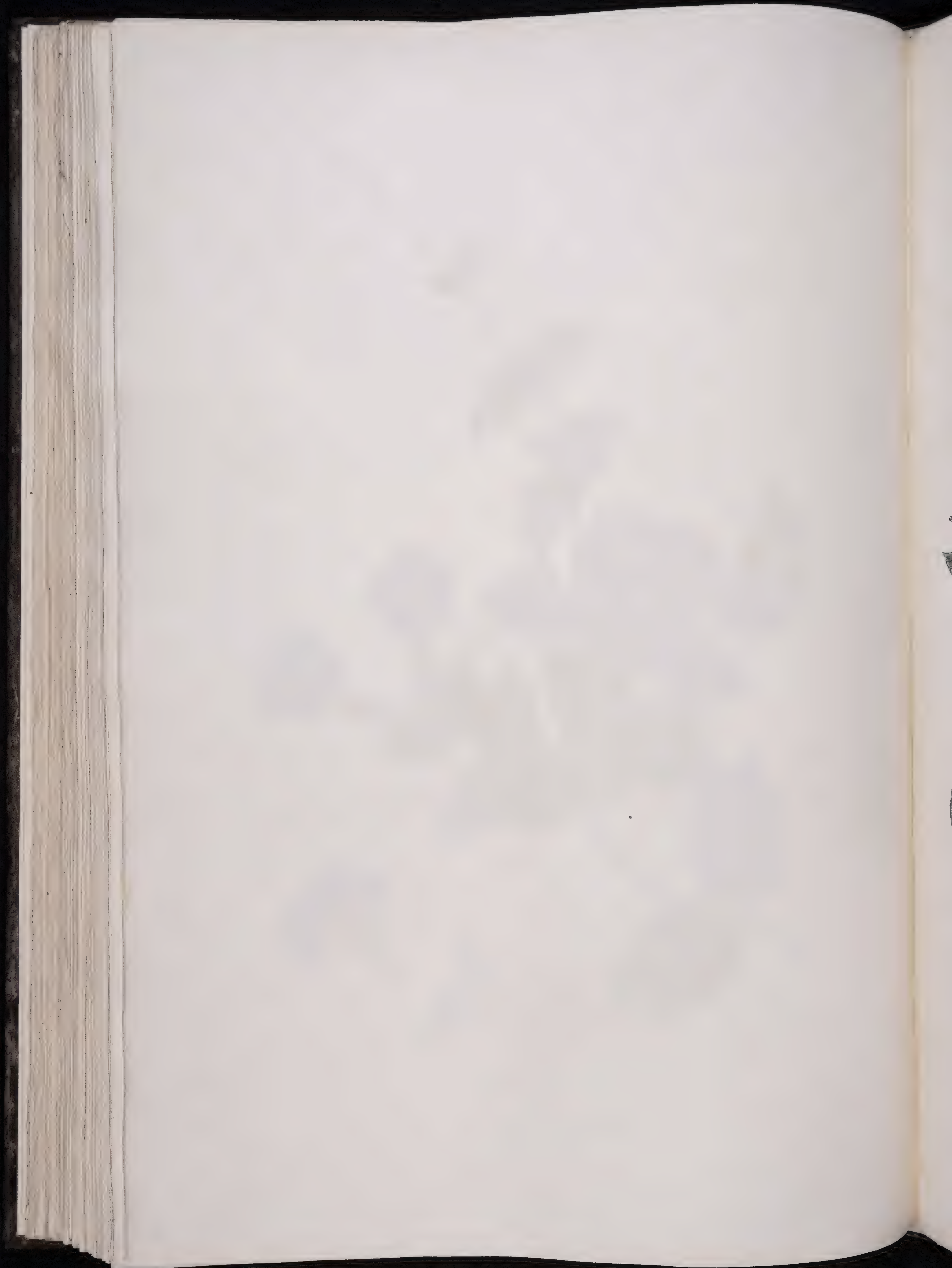
Printed by Engelmann, Graf, Co. and Co.

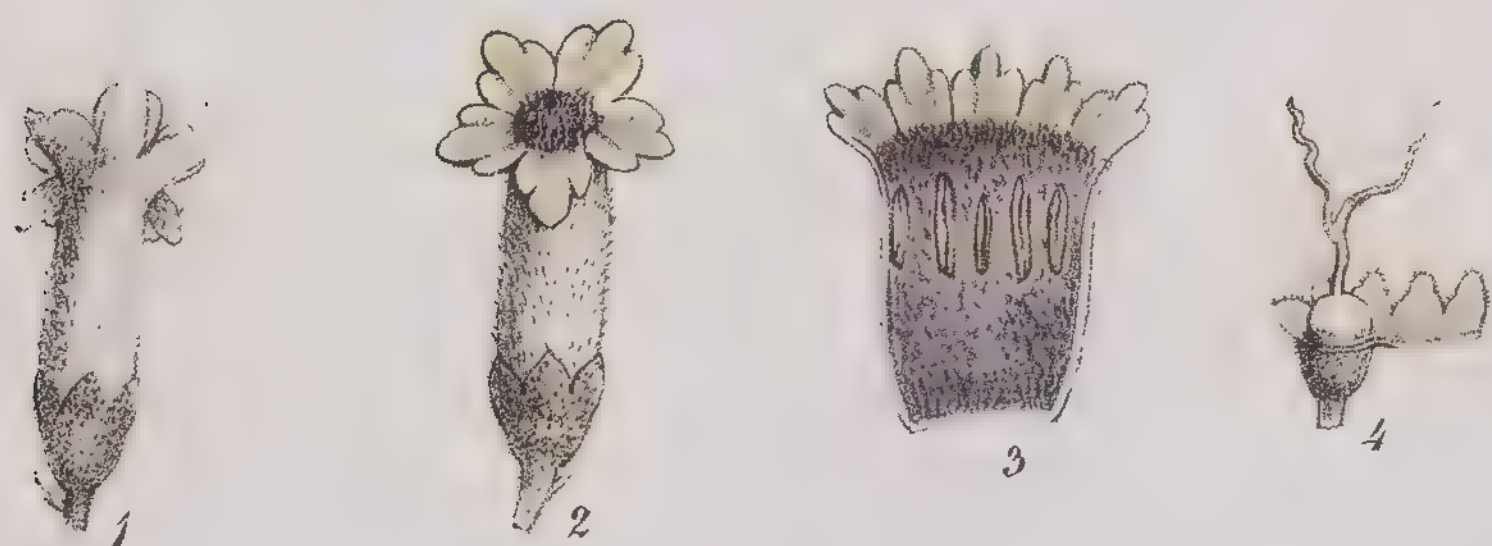
M. G. & Co. lith.





Thunbergia Hawtayneana.





Psidium *del?*

M. Gouan del.

Paederia lanuginosa





Calanchoe teretifolia





Kalanchoe subamplectens





Rehmannsd. del.

Printed by Engelmann, Graf, Conrad Kilo.

M. Gausich.

Viola lucida





Goussier del.

M. Goussier lith.

Viburnum stellulatum.





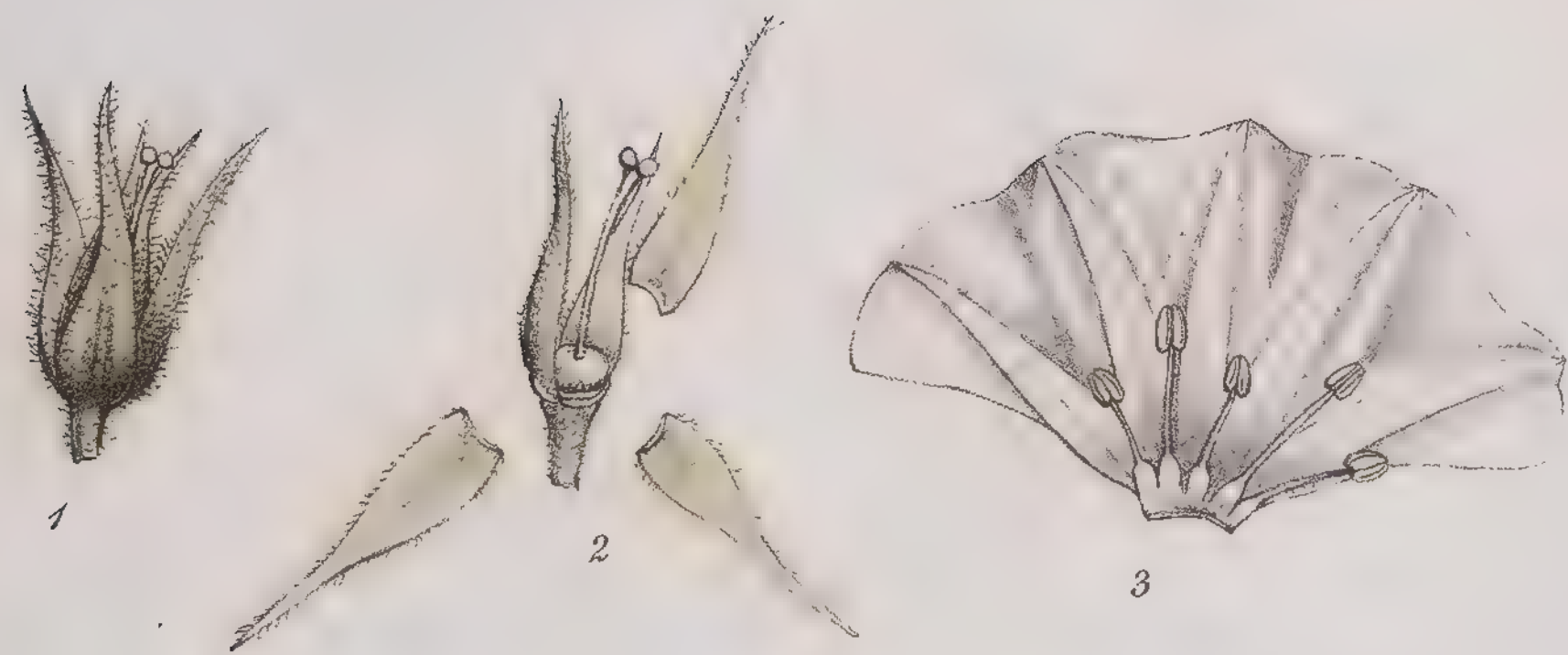
Gerard del.

Printed by Engelmann, Graf, Lindstedt & Co

M. Cassa del.

Uncaria pilosa.





Convolvulus Wightii

W. Wightii del.

Printed by Engelmann, Graf, Corndet & Co.

M. Gussone lith.





Acanthus rotundifolius

Bartholomae del.

Printed by Engelmann, Great Brunswick St. & Co.

M. Bauer sculp.





Pyrus indica.





Quercus semecarpifolia?





Adisia hymenandra.
Printed by Engelmann, Graf, Grunert & Co.

M. Gussone del.



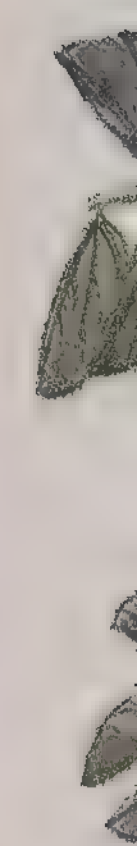


in hand, etc.

Printed by Longstrech and Tait, 1840.

M. Gussone del.

Sclanthura lanuginosa





Acacia mollis.

Corrachan del.

Printed by Engelmann, Graf, Grindet & Co.

M. G. Gaudet lith.

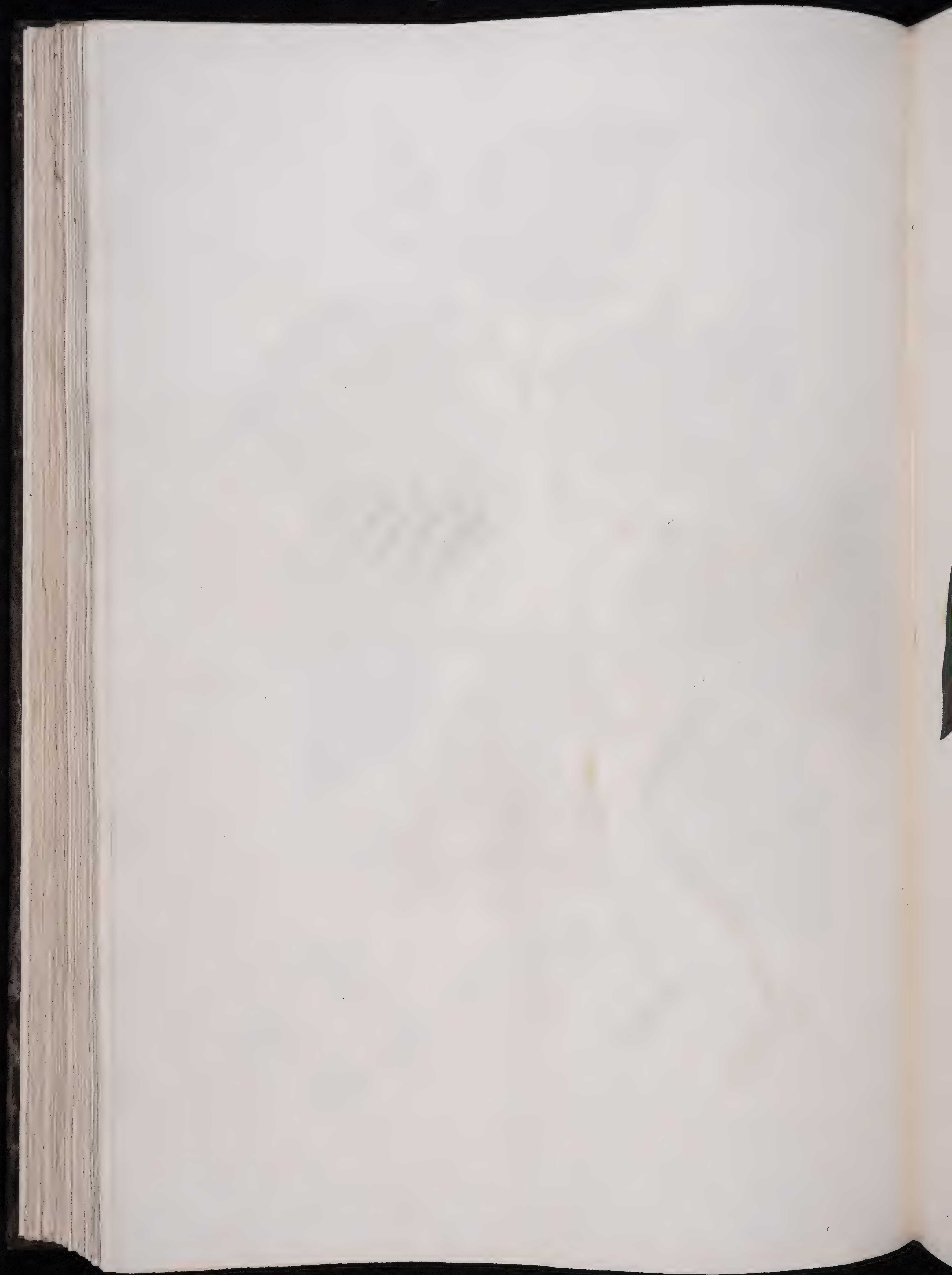




Lauraja nepalensis



Blackwellia nupatensis.





Goussier del.

M. Goussier del.

Myrsine macrophylla





Cerasus acuminata.





Magnolia insignis.

Printed by Engelmann, Graf, Göttsche & Co.

M. G. & Co. Lith.





Bignonia amoena.

Printed by Engelmann, Graf, Conradt & Co.

W. H. R. S. del.

L. 10000 1.1





Polygala persicariaefolia.

Printed by Engelmann, Graf Coudert & Co

M. Gussone del.

Coronilla del.

五
山
姓
氏

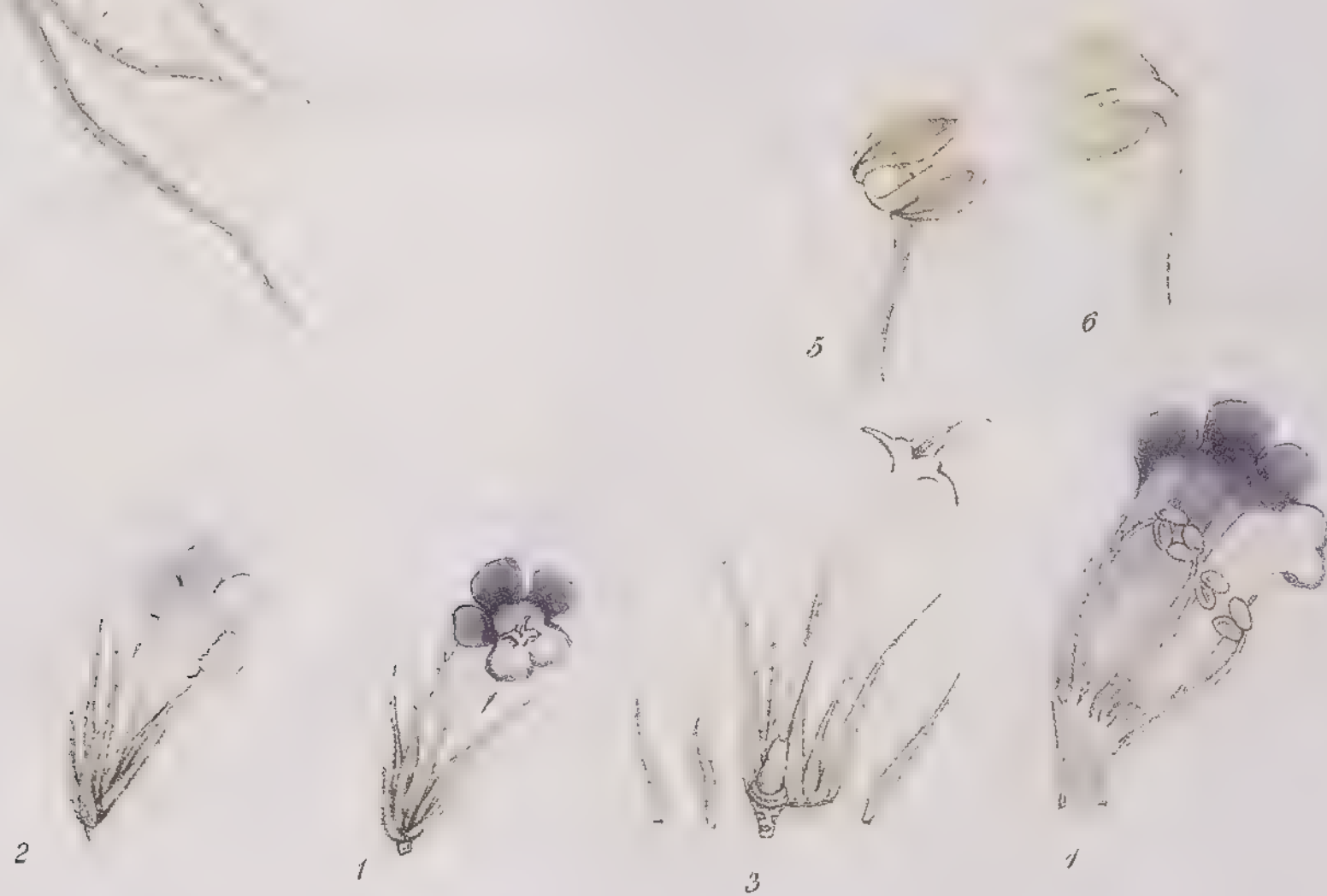


Polygala crotarioides.



Argostemma verticillatum.





Gorachand del.

Staurogyne argentea

Printed by Engelmann, Graf, Conrad & Co.

H. Bauer sculp.





Coropogon pubescens.





Hymenodictyon flaccidum





Wachend. del.

Ligustrum foliolosa

Printed by J. G. Fisher, New York & Co.

M. G. Fisher.



6



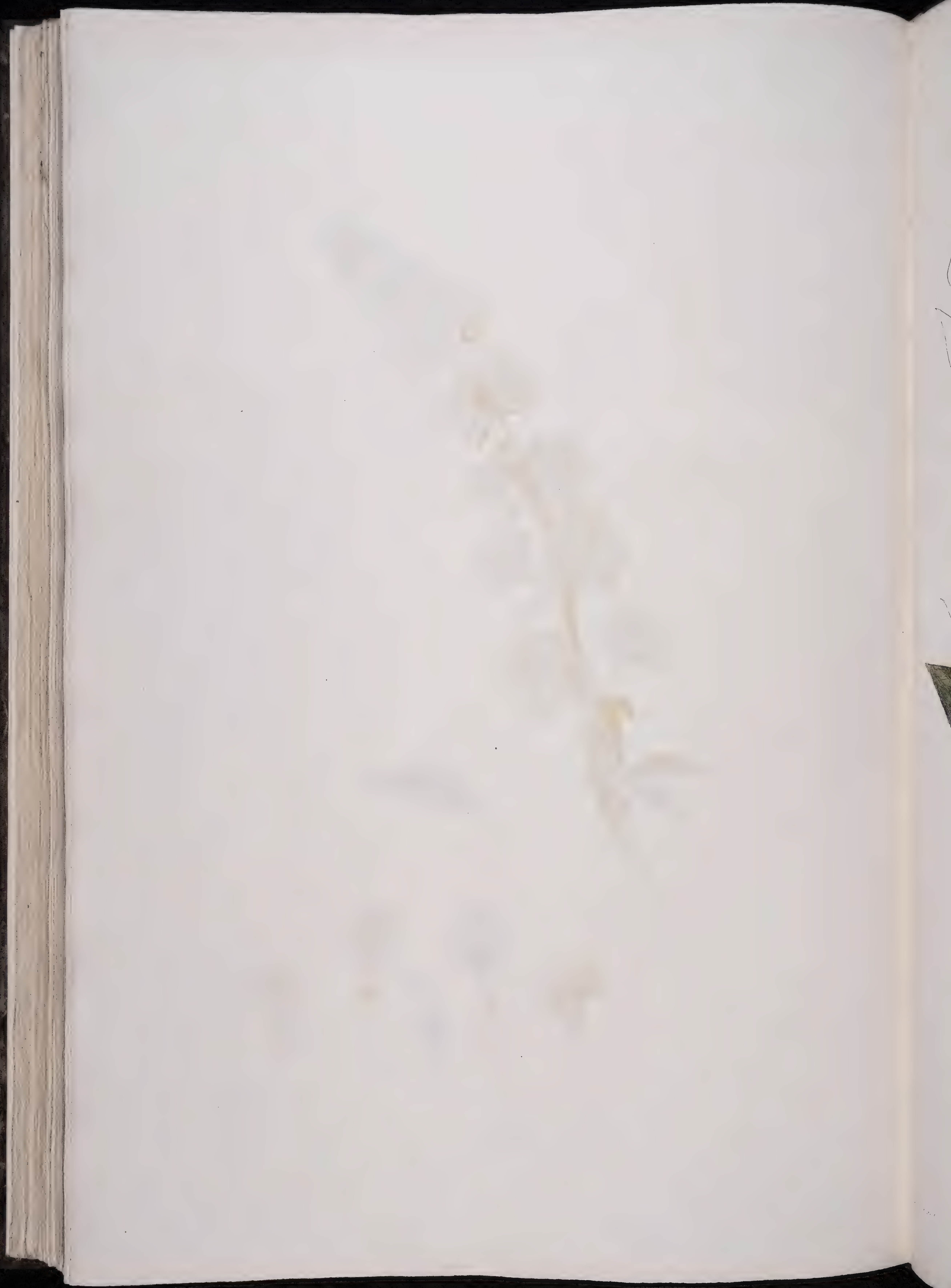
Hedera polyacantha.

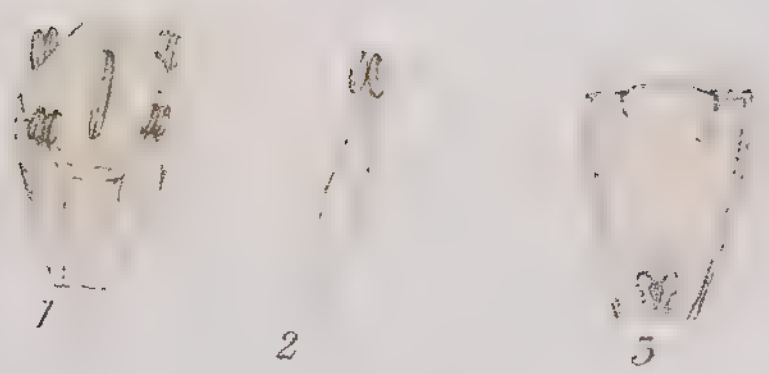
M. Goussier del.



Deutzia staminea.

Printed by Engelmann, Graf, Condit & Co.





Polka caudata L.

Printed by Engelmann, Graf & Co.

M. Gauer del.





Impatiens puberula.

Prodr. & by Engelmann, n. Graf, Conrad & Co

M. C. Davis lith.





Impatiens. insignis.

Printed by Engelmann, Graf, Wender & Co.

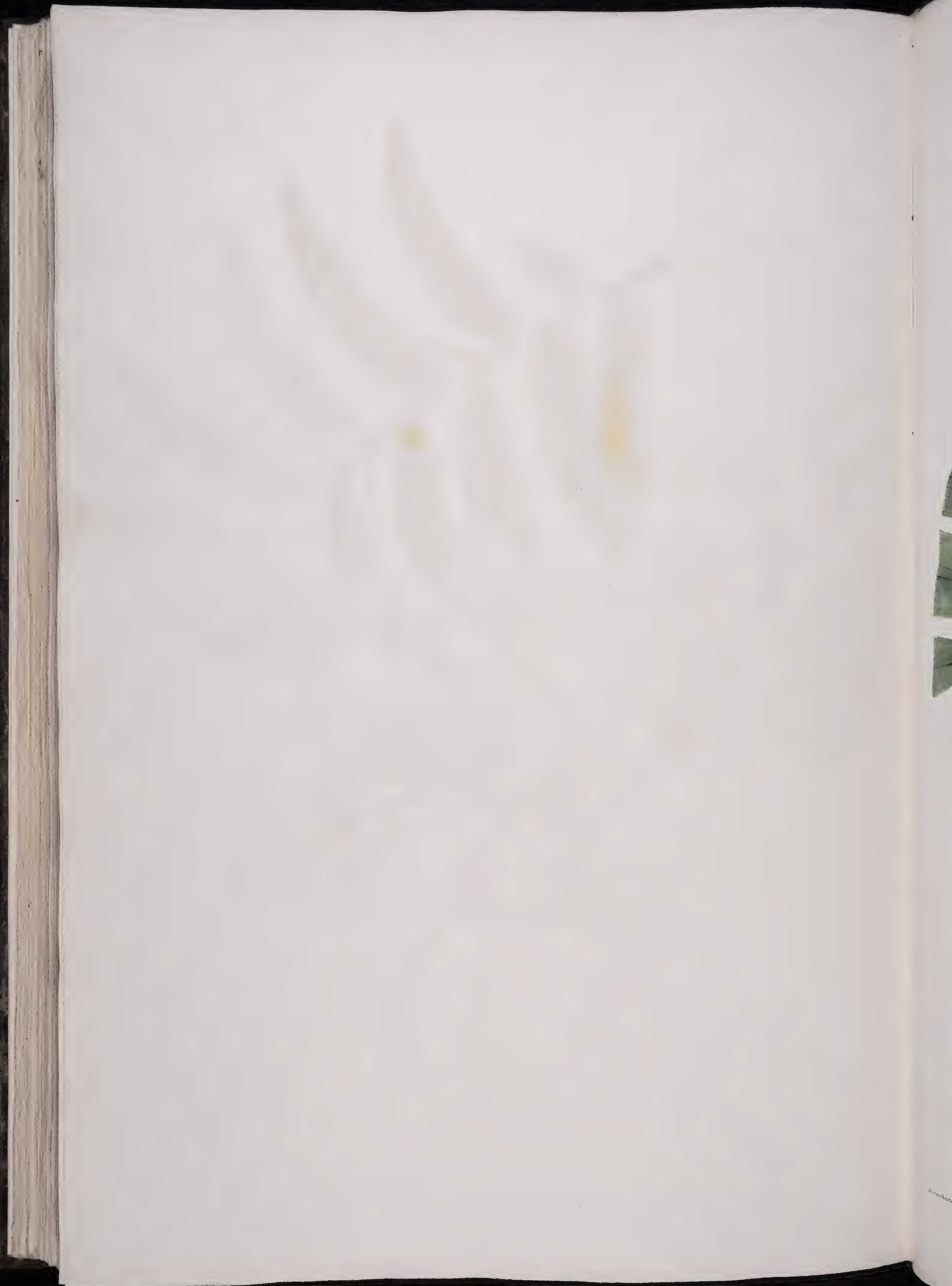


Dendrobium moschatum var.

Winchind del.

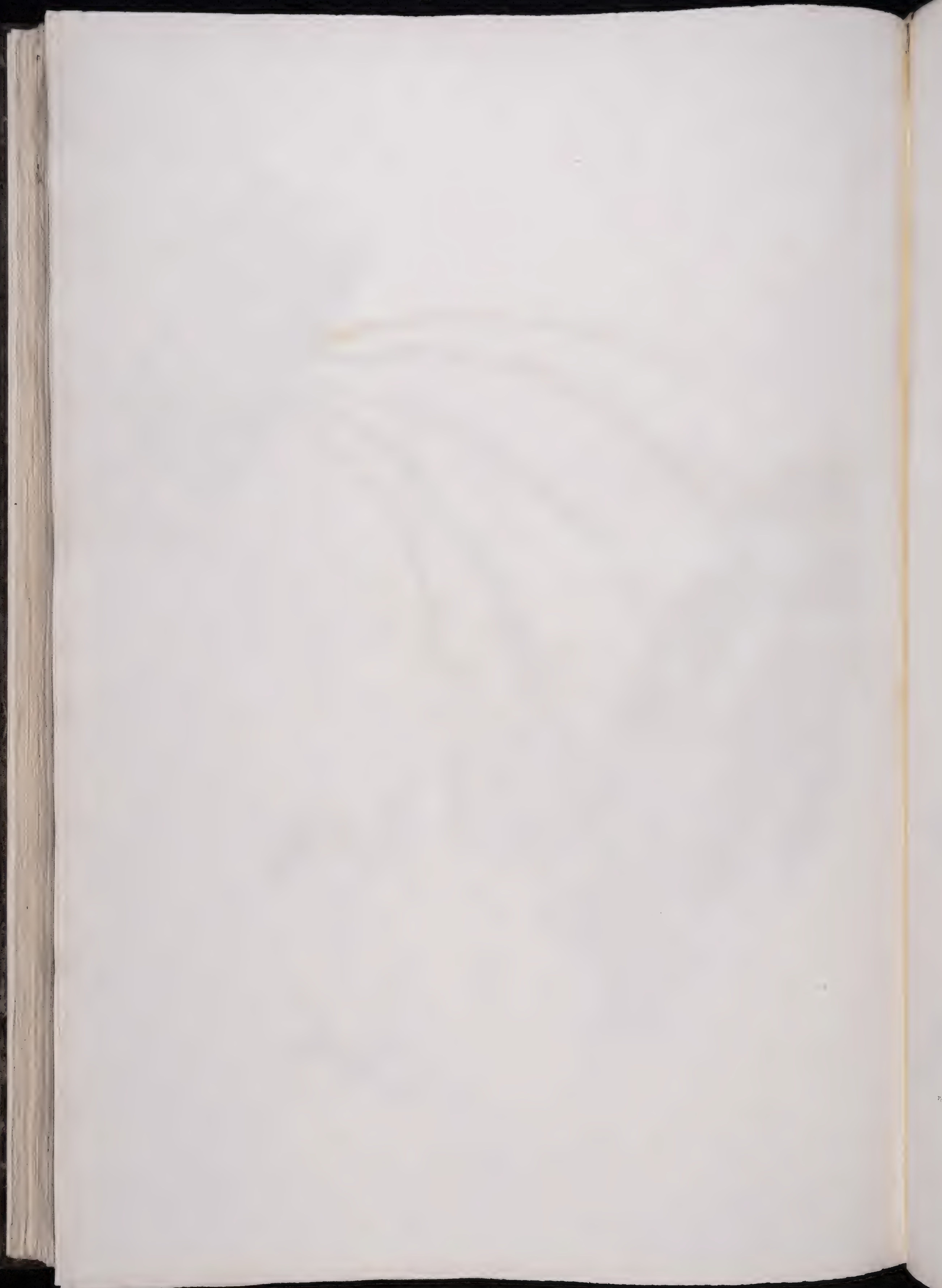
Printed by Engelmann, for the author.

M. 1848. 1849.





Dendrobium heterocarpum.





Eria alba.

Veschnepersaud del.

Printed by Engelmann, Graf, Condat & Co

M. Goussier del.



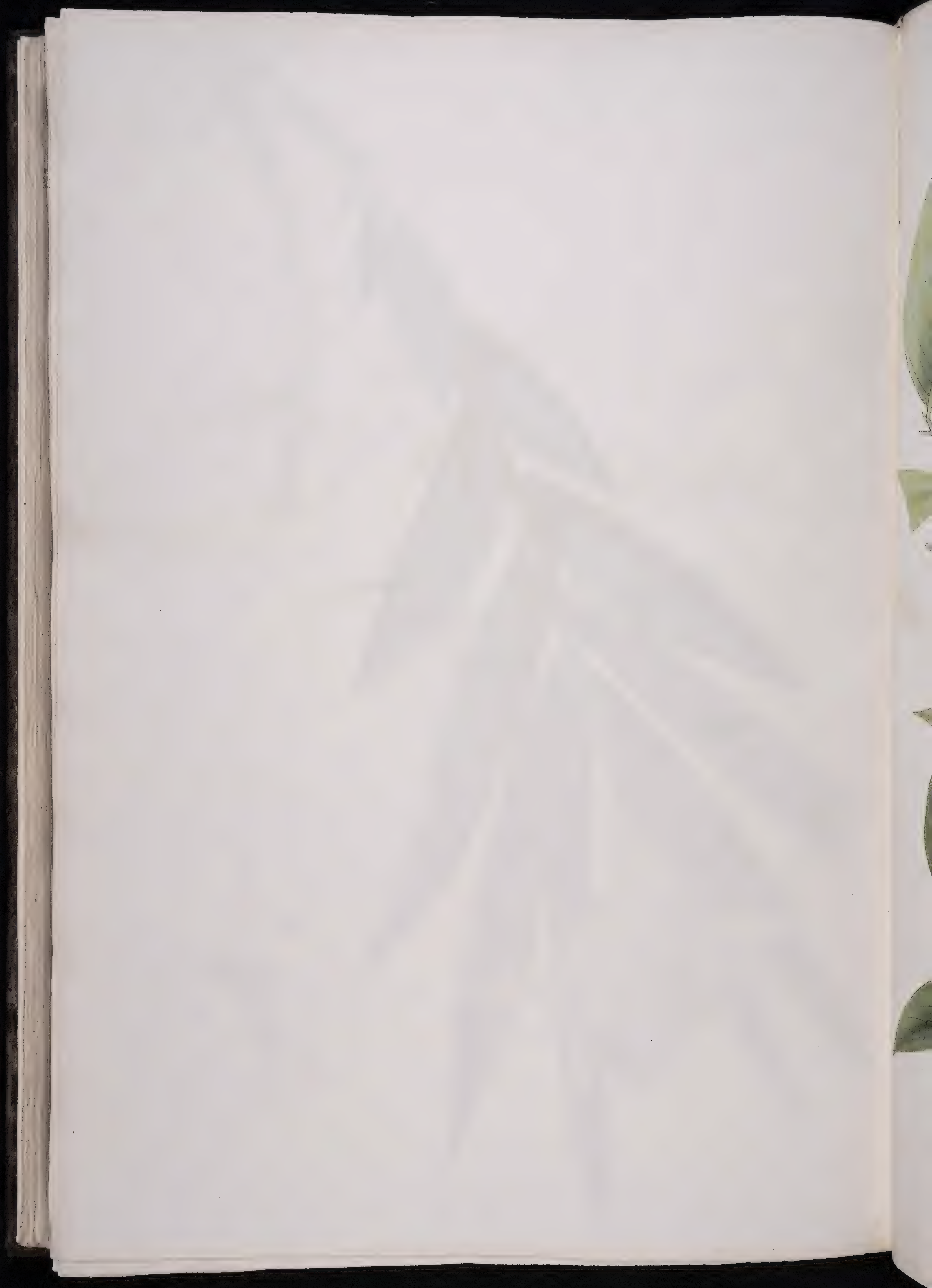


Phaius albus.

M. Gaudet del.

Printed by Engelmann, Graf, Coudet & Co.

Trichopogon albus del?





Engelhardtia Roemeriana.

Fructus in L. suberosa, var. - and R. L.

Fructus in L. suberosa, var. - and R. L.

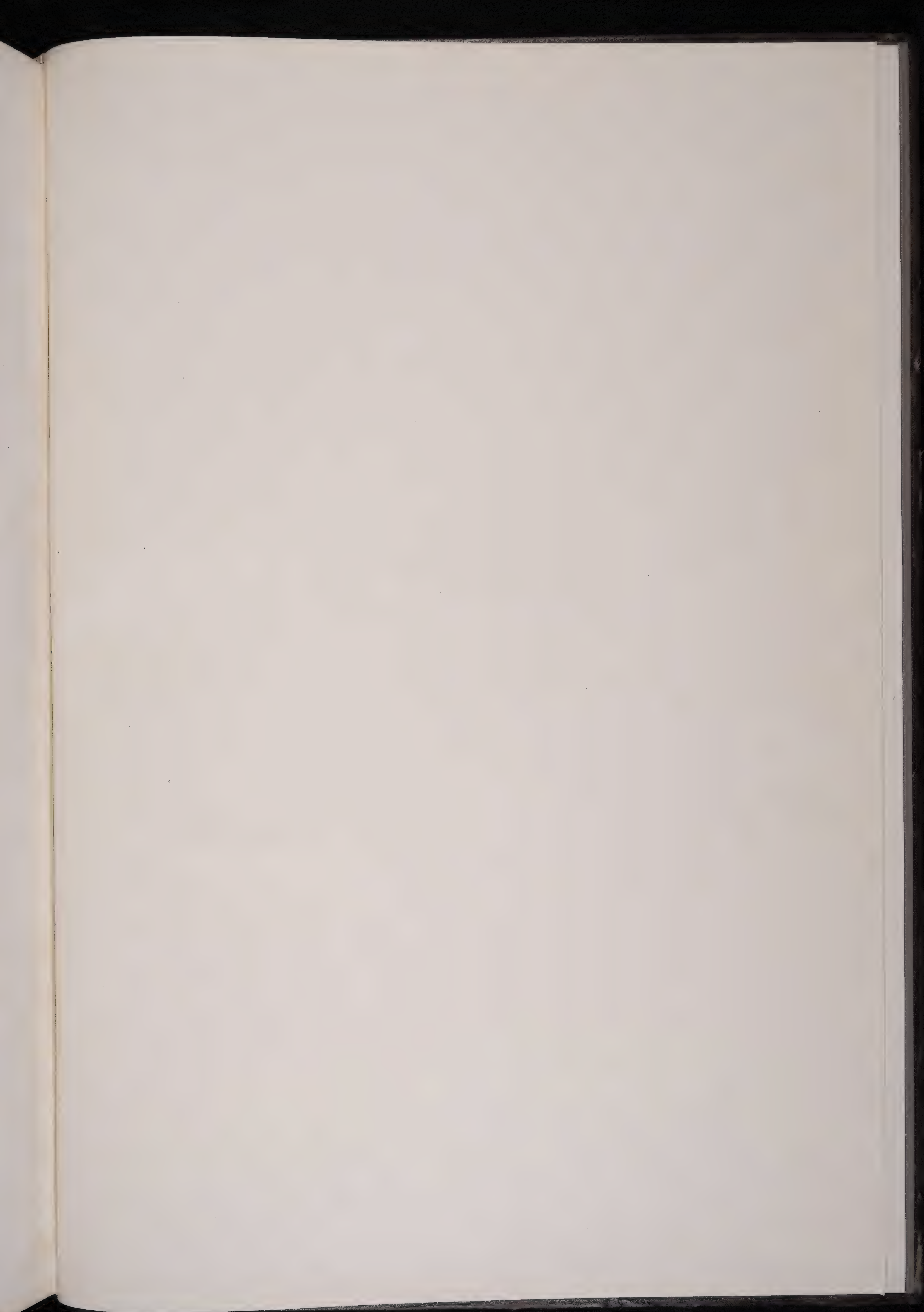




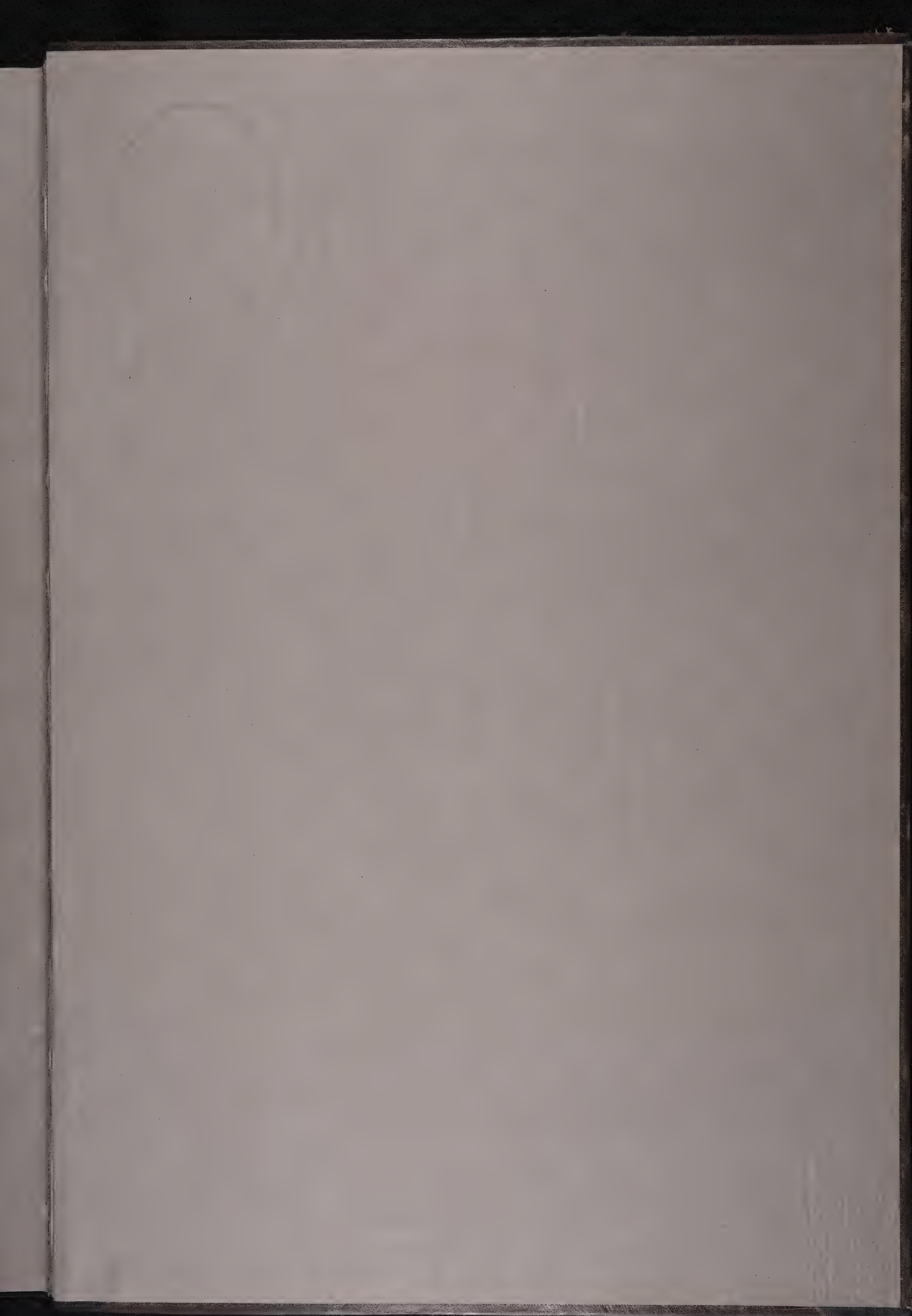
Ulmus lanceaefolia.

Painted by Augustus Bird, London & Co.

N. Gussone del.















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M
C. 8. 8. 8. 17

PLANTÆ ASIATICÆ RARIORES;

OR,

DESCRIPTIONS AND FIGURES

OF A SELECT NUMBER OF

UNPUBLISHED EAST INDIAN PLANTS,

BY

NATHANIEL WALLICH, M.&PH.D.

KNIGHT OF THE ROYAL DANISH ORDER OF DANNEBROG:

FELLOW OF THE ROYAL SOCIETIES OF LONDON AND EDINBURGH; CORRESPONDING MEMBER OF THE ROYAL INSTITUTE OF FRANCE; FELLOW OF THE LINNEAN AND GEOLOGICAL SOCIETIES OF LONDON; MEMBER OF THE ROYAL SOC. OF SCIENCES, AND THE ROYAL MEDICAL SOC. OF COPENHAGEN, THE ACAD. NAT. CURIOS. OF BONN, THE ASIAT. AGRIC. AND MED. SOCIETIES OF CALCUTTA, THE ROYAL ASIAT. SOC. OF LONDON, THE SOC. NAT. CURIOS. OF MOSCOW; FOREIGN MEMB. OF THE PHYSIOGRAPH. SOC. OF LUND, AND OF THE HORT. SOC. OF LONDON; CORRESPONDING MEMB. OF THE MUS. D'HIST. NAT. OF PARIS, OF THE ACAD. OF NAT. SCIENC. OF PHILAD., THE SOC. OF ARTS AND SCIENCES OF BATAVIA, THE ECON. SOC. OF THE PHILIPPINES; HONORARY MEMB. OF THE HELVETIC SOC. OF NAT. SCIENC., THE ROYAL BOT. SOC. OF RATISBON, THE LIT. SOC. OF MADRAS, THE AGRIC. SOC. OF ST. HELENA, &c. &c.

IN THE BENGAL MEDICAL SERVICE OF THE HONOURABLE EAST INDIA COMPANY, AND SUPERINTENDANT OF THE BOTANIC GARDEN AT CALCUTTA.



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1831.

